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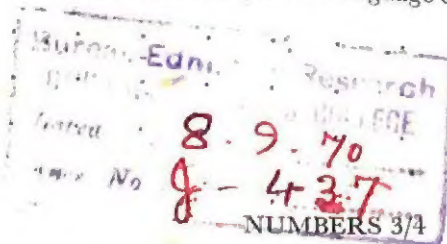
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THE JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY AND ALLIED DISCIPLINES

Official Organ of the Association for Child Psychology and Psychiatry

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MENTAL SUBNORMALITY AND CHILD PSYCHIATRY*

JACK TIZARD

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IN THIS country, and in most of Europe, the Mental Deficiency Services are part of the Mental Health Services, and the subject of mental defect might therefore be considered to be properly a part of psychiatry. However, the boundaries of mental subnormality extend beyond those of psychiatry, just as psychiatry itself includes provinces which are far removed from mental subnormality. The overlap between the two subjects is greater in the case of children than in the case of adults, since mental subnormality is by far the commonest of the severe mental disorders of childhood, whereas schizophrenia and depressive disorders are more prevalent in adult life. But in spite of the fact that mental defect is such an important part of child psychiatry, there has, until recently, been little contact between those concerned with the mentally retarded and those concerned with children suffering from other kinds of mental handicap.

In these circumstances one might have expected that little progress would be made in mental subnormality. Yet this is clearly not the case. During the last thirty years, spectacular progress has been made in the biochemistry and genetics of mental subnormality. Other notable advances have come in our knowledge of diseases of environmental origin. The best accounts of this work are to be found in Penrose (1963) and in Hilliard and Kirman (1965). Again, there has been much progress in mapping the epidemiology of mental defect. Finally, since the second world war, there has been a revival of interest in the exploration of psychological problems, in the study of methods of teaching, and in finding out just how best to employ the mentally subnormal and to cope with their problems and those of their families.

I am inclined to believe that, during the last thirty to forty years, in spite of unparalleled expansion in services and some fruitful research, comparable advances have not been made elsewhere in child psychiatry. The same sterile arguments are to be seen in the pages of the journals; the same confusion surrounds our views as to the nature of different kinds of disordered behaviour; the same conflicting estimates are made about the prevalence of maladjustment in the child population, and the same disputes take place about the efficacy of different kinds of treatment. I propose, therefore, to contrast the state of knowledge and research in mental subnormality on the one hand and in child psychiatry on the other, and to point out that the methods that have proved so successful in mental subnormality have also been shown to offer the same promise when they have been applied in child psychiatry. The difference between the two disciplines lies, I believe, in the fact that, whereas scientific methods are standard practice among research workers in mental deficiency,

*Chairman's Address to the Association for Child Psychology and Psychiatry, 10 February, 1965.

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only a few child psychiatrists are interested in posing questions that permit of scientific answers. If this is so, one may speculate as to the reason for it, and that I propose to do also.

ADVANCES IN MENTAL SUBNORMALITY

Let us look first at the progress which has been made in our understanding of mental subnormality, going back to the beginning to do so, and noting the developmental milestones. A history of the care and study of the mentally retarded has recently been written by the foremost English-speaking psychiatrist, Kanner (1964): I have drawn on this for the historical material contained in this section.

First came the recognition of the condition of extreme mental backwardness as something worthy of psychological and medical study. In a way, this was Itard's contribution in 1799-1804. He demonstrated that a fool, an idiot with no recognizable human characteristics at all except physical ones, could become a subject for scientific and humane study. Moreover, he opened the way to clinical research in this field by showing the value of the intensive study of a single case. His scientific success, and his deep concern with his patient, put the subject on the map and things could never be the same again.

The next advance came very soon afterwards. It was a *grading* of mental subnormality in behavioural terms, according to the severity of the handicap. Early in the nineteenth century Esquirol used language as the principal criterion: an imbecile, he said, is a mental defective who can communicate verbally; idiots can use only a few words and short sentences, or utter monosyllables and grunts, or have no language at all. Later, Séguin wrote that "The primary aim of classification is to attain a gauge of mental activity which shall facilitate learning", and throughout the nineteenth century there was much discussion of how best to divide the mentally subnormal by grade, or severity of their mental handicap. Séguin himself was much interested in this problem, and indeed in problems of measurement of all kinds—thus he is credited with the invention of the clinical thermometer, and wrote a book on clinical thermometry for mothers.

The distinction between idiots, imbeciles and the feeble-minded, first made on the basis of subjective impressions and clinical judgement, was much later objectified and quantified by the brilliant work of Binet and Simon, whose invention of the intelligence test opened up a whole new branch of psychological enquiry. Interest in this continues unabated today. The point that I wish to make here is that the classification of mental defect in terms of severity came well before the differentiation of any clinical types. Because of its biological and social significance, classification by grade, or severity, is still of fundamental importance, even today when much more is known about the different diseases which give rise to mental subnormality. Idiots and imbeciles are *qualitatively* different from the feeble-minded and educationally subnormal, and from people of ordinary intelligence. Their handicaps, we now know, are usually brought about by different causes from those which result in educational subnormality; they have a different expectation of life, they are rarely fertile; and they require a different kind of management and different services, to enable them to develop their potentialities.

Whenever these differences between the grades of mental defect are not recognized,

serious mistakes in social policy are made. For example, O'Connor and I, in 1948, tested all the so-called feeble-minded patients in a large mental deficiency hospital, and showed the average I.Q. to be over 70 points rather than less than 60. Later we showed, and others confirmed, that this pattern of test scores was quite typical of the feeble-minded patients who constituted three-fifths of adult defectives in institutions in England. We deduced from our enquiries that the great majority of them were employable, and that the main need was for an effective rehabilitation and social training programme to enable them to return as quickly as possible to the general community (O'Connor and Tizard, 1956). At that time very little of this sort of thing existed in the mental deficiency service—the patients were treated more or less as imbeciles, given craft work or occupational therapy, and little education or social training. All this had the effect of reducing, rather than developing, their industrial and social potential. When the mental deficiency hospitals changed their training programmes to meet the real needs of their patients, the results were very good indeed, and today the situation in virtually all mental deficiency hospitals, and many local authority adult training centres, is quite different from what it was even fifteen years ago. The change is the more remarkable when one remembers the opposition there was to the suggestion that most of the hospital patients were capable of occupational training rather than raffia work or folding envelopes.

I have already mentioned that the differentiation of the mentally retarded by diagnosis, or clinical type as it is called in mental deficiency practice, came much later than the diagnosis by grade or severity of the handicap. With the exception of cretinism, no differentiations were made by clinical type until Langdon Down gave a clear description of the condition of mongolism in 1866. Down's work is important for two reasons: first because he described what is numerically the largest clinical group of severely subnormal persons; secondly because he saw the need for a classification of mental subnormality based on aetiology. The fact that his own excursion into aetiology was ridiculous does not lessen the importance of his achievement. During the last thirty years of the nineteenth century a number of other diseases, mainly degenerative diseases of the central nervous system, were discovered, and knowledge has accumulated steadily over the last century. However, even today, the causes of at least two thirds of severe mental defect remain obscure, and in about half of these cases there are no indications whatsoever in the family history, the mother's environment or pregnancy, or the child's early years which give a clue as to why he should be so backward. Thus, although great progress has been made, we still have a long way to go.

A third field in which conspicuous advances have been made is in the field of treatment—unfortunately, less in specific treatment for the diseases which result in mental subnormality, than in what has come to be called remedial treatment. Séguin was the real founder of special educational treatment for the mentally handicapped. His main text book was published in French in 1846, and a revised edition in English in 1870. Séguin had the idea that the mentally subnormal had minds shut up in imperfect organs, so that little was able to get through the tiny windows of perception for the mind to work upon. He was influenced in his thinking by what was known about the deaf, where language development was clearly stunted and delayed by the failure of the ear to transmit the requisite verbal pabulum

for the brain to work upon. Séguin thought that whereas deafness and blindness were due to defects in particular sense organs, mental subnormality was the result of a more general defect in the sensory neurones. He therefore advocated a form of sense training to exercise the mind through the senses, and in one form or another this idea persists right up to the present time. In Tredgold's (1949) text book, for example, one can still find exactly the same phrases about stimulating the sensorium through the special sense avenues of sight, hearing, touch and muscle movement, as were to be found first in Séguin and then repeated by various writers such as Shuttleworth and Montessori and others through the succeeding century.

At the present time, there are two lines of current research which hold out much more promise: one is psychological, concerned with the analysis of specific defects and deficits. This has been pioneered by Luria (1961), Kirk (1958), O'Connor and Hermelin (1963) and others. The second line of approach is an educational and developmental one, which attempts to utilize, and where necessary modify, ordinary child development practices, adjusting them to the general developmental level of the mentally retarded. Of course this second approach leaves many questions unanswered about the nature of mental defect; it is, indeed, complementary to the first. Nonetheless, it has a great deal to recommend it from an educational point of view.

I have already mentioned the developments that have taken place as far as the training and employment of adult defectives are concerned. My own view is that, as a *research* problem, this matter has now been solved—at least for a twentieth-century industrial society with full employment. We have a very good idea indeed about the potentialities of the mentally retarded, the kinds of thing they can be taught to do, and the way to teach them. The great majority can be gainfully and happily employed, and can live socially useful and contented lives in society, given a certain amount of help of a kind that we all know about. That this help is not provided today is due to the inadequacies of our services rather than to a lack of knowledge about what kind of help should be provided.

It must, however, be said that in the provision of services a very great deal has been done. The first services to be created were residential institutions, modelled on the pattern of a pedagogical establishment set up near Interlaken in Switzerland in 1839 by Guggenbuhl. The idea of model asylums for the mentally defective caught on, both in this country and in other parts of Europe, and throughout the nineteenth century and the early twentieth century there was a steady expansion in residential asylum provision. The development of day services came much later, and progress was delayed by the first world war, followed by the chronic economic depression in the years that led up to the second world war and then by the second world war itself. Today we are in the middle, or perhaps at the beginning, of a great expansion in what have been called 'community' services, and many varied and interesting developments are taking place under the auspices of local health authorities up and down the country. The idea of a *local* mental health service is itself a very significant extension in our thinking. Much experiment on these lines is going on in the mental illness field, and the weakest feature of our mental deficiency programmes today is that little or no evaluation of the efficacy of different kinds of service has as yet been carried out—indeed, the very idea of an experimental social science still remains to

be translated into practice. Nowhere would it be easier to do so than in the field of mental subnormality.

A final way in which progress in mental subnormality has occurred is in the field of epidemiology. In this respect mental deficiency has a particularly rich history. As early as 1811, Napoleon ordered a census of cretins to be made in one of the Swiss cantons (Kanner, 1964). Nothing much came of this, but throughout the nineteenth century other attempts were made in various places to determine the frequency of subnormality and the factors that influenced it. However, progress came during the twentieth century rather than the nineteenth. In 1908 the Royal Commission on the Care and Control of the Feeble-Minded ordered a census to be made of the numbers of defectives in various parts of England. The case-finding was inadequate, but the data were used for administrative purposes, in the framing of policies which led up to and followed the 1913 Mental Deficiency Act. Twenty years later, Lewis, between 1925 and 1929, carried out the most thorough and informative survey which has ever been undertaken in this or any other country (Lewis, 1929). He was able to use intelligence tests to assist him in his grading of severity of mental defect. He also found that, owing to the introduction of extensive services, case finding, particularly among children, was relatively easy. Finally, he was able to use epidemiological methods that were, by this time, fairly sophisticated, and he presented his data in a form which makes it still possible to interpret them and see exactly what he had done.

Other surveys have been carried out both before and after the war, and one at present being undertaken by Kushlick (1964, 1965) in Wessex promises to bring Lewis's findings up to date and to supplement them. Today, also, a National Child Development Study is being undertaken by Butler and Kellmer Pringle which holds out much promise. In this inquiry all seventeen thousand children born during the first week of March 1958 are being followed up at intervals to determine their intellectual and physical progress, and its relationship to their social and environmental circumstances. The study is likely to give definitive information about such factors as the relationship between prematurity, social class, and mental defect, and the outcome of pregnancies in which there have been complications of labour, neonatal asphyxia, or other difficulties in the antenatal, perinatal, or postnatal period.

Looking at the subject of mental defect as a whole, therefore, we see that research is flourishing. A great deal of biological work is being done—research which is leading to the discovery and diagnosis of new diseases, to the elucidation of genetic factors which are responsible for them or associated with them, and in a few cases such as phenylketonuria, to the introduction of effective forms of treatment. The prognosis is well understood; and great steps have been taken in methods of training and of educating the mentally handicapped, of finding them work, and fitting them into the community. Much is known about the social factors associated with mental subnormality, and of the steps that need to be taken in order to reduce the load on the parents and on the community. The epidemiological picture is being pretty thoroughly drawn. And, with the introduction of the so-called 'at risk' or observation register through which babies with adverse factors in the prenatal, perinatal, or postnatal period are being specially followed up by health visitors and where necessary by paediatricians, public health measures are being taken which are bound to lessen the incidence of some conditions which bring about mental retardation. Likewise, the

introduction of special services to deal with handicapped children and their families will enable us to take effective measures to prevent secondary handicaps from developing in children who are at risk because of hereditary factors, or adverse circumstances in pregnancy, infancy, or childhood.

CHILD PSYCHIATRY

Let us now examine some aspects of child psychiatry which are not primarily concerned with mental defect—the general psychiatry of childhood, if you like. I do not propose to survey the field in any detail. It is, however, clear, I think, that our knowledge is nothing like as complete in general child psychiatry as it is in mental defect. If you doubt this, consider the following:

Diagnosis. The diagnosis of mental disorder in children is fraught with uncertainty and controversy. There is not even any widely accepted scheme of classification, and the situation is so unsatisfactory in this respect that little attempt is made in, for example, the *World Health Organization's International Statistical Classification of Diseases* (1957) to cope with child psychiatry.

Secondly, even when a system of classification is adopted—such as the one used in the Underwood Report on Maladjusted Children (1955) and in many clinics up and down the country—few attempts are made to assess the severity of any condition. In mental deficiency practice the rating of severity, or grade, of mental defect has proved indispensable. I am sure that estimates of severity would also prove useful in other branches of psychiatry. Yet such things are rarely attempted.

One might ask: does all this matter in practice? Yes, it does. It means, for example, that in many child guidance clinics all cases go through the same diagnostic procedure, the child and his family all being seen by all members of 'the team'. The majority then get taken on for 'treatment', treatment being, in this case, psychotherapy for the child, and counselling for the parents. This is a lengthy business, more often than not terminated by the refusal of the child or his parents to continue with it. Because it all takes so long, almost all child guidance clinics have inordinately long waiting lists. I am told that, in one enquiry carried out some years ago amongst child guidance clinics in London, only Dr. Winnicott's clinic was able to see a child immediately. The rest had waiting lists of from three months to a year or even longer. This is an intolerable situation, and one which would not, I suspect, be remedied merely by the proliferation of clinics up and down the country. More realism is needed in our attitude to treatment and to the public health problems of child psychiatry (see, for example, Hunt, 1961; Anderson and Dean, 1956).

This raises another question—the efficacy of treatment. Vernon (1964) has recently reviewed the literature on the efficacy of long-term psychotherapy, and he concludes, as all who have undertaken this thankless task have concluded, that "except in some fairly straightforward instances such as vocational counselling, the effects so far isolated [of psychotherapy and counselling] are still often small and inconsistent, indicating that expert diagnosis and treatment may not, as one would have expected, have much more to offer than naive methods. Particularly important . . . is the lack of any demonstrated superiority for deep-oriented methods". (Vernon, 1964, p. 136.)

Concern about child psychotherapy, its objectives, and its effects, is, of course,

very widespread. Recently Scott (1965) has stated some of the main problems in a review of a book containing a comprehensive and representative presentation of fifty-seven contrasting approaches to various aspects of the psychotherapy of children. He writes:

"The objective of treatment is very variously stated: reduce anxiety to allow new relationships to occur, decrease fear to the point at which 'inherent normal ambivalence' can again operate, help the child to assume responsibility for itself, bring him to the level of development appropriate to his age, provide opportunity to play out a forbidden theme; in one contribution the objectives seemed to be co-extensive with a good system of education. There is a curious reluctance to state the objective as the removal of symptoms."

And he goes on to say:

"Because of the lack of adequate definition of problems, type and objectives, the processes of treatment do not carry conviction or clarity. Klein recommends immediate interpretation, Anna Freud a preliminary building-up of the 'good parent' relationship, Smolden claims good results without much use of verbal communication. There is remarkably little enquiry into the large number of possible operative factors which might occur when the resources of a clinic are concentrated upon a child. The general complacency is illustrated by one of the contributors' statement that: 'The scientific world wants to know why we are so sure . . . the parents only that we are sure'. The numerous case reports are liberally sprinkled with such phrases as 'it became clear that', 'explanation seems almost superfluous', 'I have good reason to believe', 'this clearly represented'; to the reader it is not always so clear."

Scott, by no means an unsympathetic critic, dismisses this book (which contains major contributions from leading analysts) as 'of historical interest' and he concludes by saying that it reveals that the field of psychotherapy is badly in need of scientific appraisal. Few people who are not themselves deeply committed to one or other 'school' of psycho-analysis could, I think, disagree with this conclusion.

The only other aspect of child psychiatry that I wish to discuss here is epidemiology. What is the frequency of mental disorder or maladjustment in children? How many children require the services of the child guidance clinic? What kinds of background do they come from? What kinds of services do they require? What are the effects of these services upon the incidence or prevalence of maladjustment?

In this country there have been, since the second world war, two official reports published on maladjusted children of school age. The first was the Report of the Underwood Committee (1955), which not only failed to answer the question of how many children required treatment for neurotic conditions, but found it "impossible to forecast the number of day or additional boarding schools or to make an estimate of the number of teachers and house-parent staff who would be required".

The second official report is the recent Scottish one, with the promising title of *The Ascertainment of Maladjusted Children* (Scottish Education Department, 1964). Unfortunately, after thirty meetings they too found it "impossible to answer" the question they were specifically asked as part of their terms of reference, namely "the percentage of children of school age likely to be ascertained as needing special educational treatment because of maladjustment".

It is disappointing that two such excellent committees should have provided so little information on the topic they were set up to investigate, but it is hardly surprising. Until one has a satisfactory system of classification and of case finding—until, that is, one knows what one is looking for and why—it is not possible to assess

the frequency of a condition, much less the need for therapeutic and remedial services. It is also not possible to investigate the effects of treatment.

Let me summarize what I have said so far, and then go on to consider whether anything can be done about it. In child psychiatry there is a widespread failure to tackle problems of diagnosis and classification, and a lack of realism regarding the effectiveness of treatment. Because of a very proper concern with the uniqueness of the individual, we too often fail to see the similarities between one child's problems and another's, and few properly controlled experimental studies are carried out, either of different forms of treatment or of different patterns of service. We seem unable to come to terms with the public health problems of child psychiatry, either through epidemiological study of the prevalence of various kinds of mental disorder or through studies designed to show the best ways of utilizing the scarce resources of child guidance clinics in the most socially useful way. These failings bring us into disrepute among our colleagues in other branches of medicine and the social sciences.

It is worth asking ourselves the reason for this difference between mental subnormality and the rest of child psychiatry. In the first place it is not because in mental defect there has been a striking success in the treatment of the mentally handicapped. Mental subnormality is notoriously resistant to curative treatment—indeed, among severely handicapped defectives there is almost always gross structural damage to the brain, and cure in any final sense is impossible. Secondly, the difference cannot be ascribed to the size of the resources poured into mental deficiency work. The numbers engaged in research in mental subnormality have always been small. In 1960, for example, I carried out an enquiry to find out just how much research was being done on psychological and social problems of mental defect in England and Wales, and at that time the number of full-time research psychologists engaged on such problems was three. There was in addition one medical statistician working on a temporary basis and another part-time. There were three or four research students, and a few doctors and psychologists who were doing part-time research in mental deficiency hospitals. In all the total was probably not more than a dozen to fifteen people (Tizard, 1962).

Thirdly, I think that it is a mistake to believe that in some way the subject of mental subnormality is 'easier' than child psychiatry. Other people's problems always look simple, but I have already pointed out that even such an obvious matter as the recognition of mongolism as a clinical entity did not take place until people had been working with the subnormal for nearly seventy years. And to give a more topical example, it is only during the last two decades that any serious thought has been given to the possibility that cerebral palsied children are not all mentally defective, and we are only just beginning to differentiate between child psychosis and mental subnormality.

Fourthly, the productiveness of work in mental subnormality does not come from the fact that some genius—a Darwin or a Sherrington—has opened up a whole new field of work which will keep many generations busy. There *have* been able people working in this field, of course, but on the whole it has not been a fashionable field for research, and it has not attracted many of our brighter sparks.

The reason for the success of so much research in mental subnormality is, I think, to be found in the fact that people have posed their questions carefully, in a manner

which has permitted scientific answers to be given to them. In contrast the large literature on child psychiatry is mainly clinical. There is a dearth of sustained, professional research, and a widespread impatience on the part of clinicians to undergo the discipline which research entails. The very richness and subtlety of the Freudian dialectic, profound though its influence has been on the whole of our thinking, has, I believe, served to impoverish research in child psychiatry. It has led men to believe that we know more than we, in fact, do, and it has prevented them from asking questions to which scientific answers can be given.

What I have said so far about child psychiatry has been almost entirely destructive. Let me, therefore, now try to make amends by drawing your attention to work which does seem to me to be likely to produce answers to some of the questions that I have raised. My own biases—an interest in public health aspects of psychiatry, a distrust of the grand theorists, an excessive empiricism perhaps, and a concern with practical matters and the short run—will be evident to you all. To apologize for these biases would be insincere; the question is, where do they take us in psychiatry?

RESEARCH IN CHILD PSYCHIATRY

I want to look again at the five aspects of child psychiatry that I have already considered in relation to mental defect: the classification of mental disorders; their severity; the problems of treatment; epidemiology; and aetiology. They are not, of course, the only important aspects of psychiatry, but that they are important no-one will deny.

1. *Classification.* The need for a workable system of classification is clear. It is, I think, equally clear that no system of classification based on typology or supposed aetiology is likely to win general support at the present time. Indeed, if we are to achieve agreement on any system of classification, it must be one which is based on behavioural symptoms—like the classification used in most child guidance clinics, for example, and included in the appendix to the Underwood Report.

My colleague, Michael Rutter (1965), who has clarified my own thinking on this matter enormously, has laid down principles upon which a classification must be based if it is to be useful, and has outlined the way in which an acceptable system of classification might be arrived at. He points out that the diagnostic distinction made in child psychiatry between conduct disorders on the one hand and neurotic or nervous disorders on the other, has in practice been found to be clinically meaningful, and to have predictive value. Factor analyses of studies of symptoms nearly always give rise to two factors, one on which anti-social and aggressive traits have high loadings, the other defined by nervous, anxious and fearful traits. More important, clinicians working in child guidance practice are able to make these distinctions more often than they perhaps realize. Thus, when Mulligan, Douglas, and I (to be published) a few years ago asked psychiatrists to pick out seriously disturbed children of about the age of thirteen who were attending their clinics for treatment, and to rate them where possible as presenting a nervous disorder, a behaviour disorder, a habit disorder, or a mixed or unclassifiable disorder, they nearly all protested that this could not be done in the majority of cases. However, in fact, they rated over 90 per cent of their patients as presenting either a behaviour disorder or a nervous disorder, and only about 5 per cent as being mixed or unclassifiable. Moreover, in

this particular study, as in others (notably that by O'Neal and Robins, 1958), the classification on these lines was found to have predictive value, both as far as the children's subsequent adjustment was concerned and in regard to later delinquency. This finding was not dependent upon the social background of the children or the kind of school that they attended.

There are, of course, other groups of mental disorder which can be clinically differentiated, have differing ages of onset, show different response to treatment, and have different prognoses. Rutter, for example, lists as well a mixed group, "the habit disorders" (or, as he calls them, "developmental disorders"), "the hyperkinetic syndrome", "child psychosis", "the mental deficiencies", "educational retardation", and one or two more.

2. *Severity.* In mental subnormality classification by grade of defect has been found to be valuable. Unfortunately, virtually no work on similar lines has been done in child psychiatry. Douglas, Mulligan and I (to be published) found, as others have done, that a rating of severity of disorder based on the number of symptoms reported by teachers had high predictive value as far as later conduct, and also delinquency, were concerned. We are at present looking at educational and other social correlates of maladjustment and are hopeful that the data that we have already collected will be found useful here also. The question of severity has not, however, been well studied, and further work is needed before a satisfactory system of grading is devised.

To rate the severity of a disorder one would have to arrive at scores or classes based on a number of factors—the number and duration of symptoms, their consequences in terms of the extent to which they affected the child's personal life or happiness, and their impact upon the lives of others. Clearly one would also have to consider some symptoms in a different way from others. Encopresis, attempted suicide, or ungovernable rage which led to serious attacks on other children, occurring in a child of ten years of age, are in a very different category from wetting the bed, food fads, or a tendency to weep when tired.

Only when we have succeeded in devising a rating of the severity of presenting problems will we be able to achieve a system of priorities for child guidance which will enable it to fulfil its public health function of serving the needs of the hard-pressed families who seek its aid.

3. *Treatment.* Here, as Eisenberg (1961) says in a significant paper, we confront a paradox. Psychological influences have been shown to be extraordinarily powerful in modifying human behaviour at physiological as well as psychological levels; yet proof of the superiority of one treatment method over another or even of prolonged over brief therapy, has been remarkably elusive. He argues that the facts at our disposal compel us to look again at what he calls the strategic deployment of the child psychiatrist in *preventive* psychiatry. He points out that neuro-psychiatric disorder is generated in slums. Central nervous system impairment in the foetus follows upon the malnutrition, inadequate prenatal care, and life stress, to which the pregnant mother in the marginal family is subject. The brain of the infant may be further victimized by poor control of infections, injury, and toxins. The slum child is likely to receive less intellectual stimulation, and to be particularly vulnerable to deprivation in the event of family disintegration.

As Eisenberg says, the child psychiatrist can make a major contribution to

mental health by helping to mobilize the community in support of social welfare programmes to minimize the sequelae of poverty. He gives many examples of how this can be done—the prevention and treatment of certain metabolic disorders which in time lead to irreversible brain damage; through public health measures, the elimination or control of environmental factors which often result in damage to the child; the elimination of child care practices, particularly among children brought up in public institutions, which result in intellectual and emotional deprivation. Finally, as he points out, there are many studies which show that the effects of short-term treatment are significant in altering the course of psychiatric illness among children suffering from a wide range of disorders. All this suggests to him, and also to me, that a shift in emphasis is required in psychiatric practice towards preventive work, and that in our clinical practice a change is required in the methods used.

Might it not be that the comparative ineffectiveness of long-term, as compared with short-term, therapy, arises because too much emphasis is placed on the elucidation of the mechanisms which are thought to be responsible for the disorder, and too little attention is paid to the advising of teachers, parents, and other adults, and the child himself, as to how to handle his problems? It may be more effective to teach a child who is painfully nervous and shy, for example, a set of manners that will enable him to meet strangers, knowing, at any rate, how to behave towards them, rather than to tease out the reasons for his shyness through a reconstruction of his past history in the hope that this will in some way cure it. Likewise, it may be more effective to offer advice to child care workers concerned with deprived children or delinquents, than to treat the children themselves. My own view is that the role of the expert in many fields of medicine and education is to advise the practitioners, teachers and parents, rather than to treat the patients or pupils. The school inspector's job is not to do remedial teaching. In like manner, the psychiatric social worker might do better to spend a large portion of her time advising and working with her colleagues rather than with her clients; the speech therapists and physiotherapists with the parents and teachers rather than the children; the psychologist with the school, teacher rather than with the 'subject'. It is through education rather than through treatment that the best results are often achieved—and even fifty hours of 'education' (in the form of therapy) spread over the course of a year, are an insignificant part of a child's life, when set apart from the rest of his experience.

4. *Epidemiology.* The Underwood Committee, and its Scottish counterpart, imply that the problems of measurements are such that it is not possible to estimate the prevalence of psychiatric disorder in children. Is this really the best that we can do? I am sure that it is not—for the following reasons:

First, there are available fairly effective and reliable paper-and-pencil questionnaires which can be given to teachers and parents for the purpose of screening out children who present problems which are a cause for concern. In this country such questions have been used effectively by Douglas (in preparation) and his colleagues, Rutter (in preparation) and Stott (1958), among others. More work along these lines has been carried out in the United States. The extent to which children are reported through the use of any type of screening device will, of course, depend upon a number of factors, including the way in which parents and teachers

are approached and briefed, and the way in which the questions are posed. On the basis of our present evidence, it seems likely that the great majority of *seriously* disturbed children can be discovered through the use of screening devices of one sort or another—the main problem is not that of missing large numbers of seriously ill children, so much as what to do about the ordinary, healthy children, the false positives, that one picks up through the use of such devices.

So the question is, having screened out children who are likely to be maladjusted, together with a number of children who are incorrectly selected by our screening procedures, can we decide which have rightly been selected and which have not? This problem has received rather little attention. Attempts by psychologists to devise batteries of personality tests for this purpose, analogous to intelligence tests for the assessment of intellectual ability, have not proved rewarding. The whole approach seems to me misconceived, and I think it unfortunate that so much time is spent on it. It is more likely that a carefully devised and properly standardized clinical procedure will yield reliable and valid results. Of course, to devise such a procedure is impossible unless we first agree upon a classification of disorders and until suitable criteria are devised by which to assess severity. These tasks should not be insuperable.

Where work on these lines has been carried out, the results so far achieved have been encouraging. Grad and Sainsbury (1966), working in Chichester, and Brown and Wing (1966) and their colleagues in the Social Psychiatry Research Unit at the Maudsley Hospital, among others, have shown that it is possible to assess the severity of the disorder of adult psychiatric patients, and the hardships it imposes on their relatives.

Two other observations about work now in progress may not be without interest, either. My colleagues Lotter, O'Connor and Wing (to be published), working in close collaboration with the Health and Education Authorities in the Metropolitan County of Middlesex, have shown the usefulness of the questionnaire method in screening out psychotic children. As you know, child psychosis is a difficult condition to pin down, and until the work of Creak (1951) and her colleagues, there was little agreement about the diagnosis. The next step was taking this definition to frame a series of carefully designed behavioural questions, and to pilot these. When a workable questionnaire had been completed, it was given to all teachers of children aged 8, 9 or 10 years whose homes were in Middlesex, asking them to fill it out in respect of any child in their class in the three birth years, who showed any of the types of behaviour described in it, to a marked extent. More than 800 schools or institutions, containing 76,000 children, were approached for information. The screening seems to have been very effective, and the second part of the enquiry—the clinical examination of these children—is now being completed. The results suggest that the prevalence of child psychosis in children of this age is about 4 per 10,000.

The second observation arises out of a survey carried out last year of children with certain kinds of handicap whose homes were on the Isle of Wight. As part of this study, two psychiatrists, Dr. Rutter and Dr. Philip Graham, each saw about one hundred children quite independently, using a structured clinical examination schedule. They were given no supporting information whatsoever about the children. Preliminary inspection of the results indicates a very high measure of agreement

between them, both on the neurological and on the psychiatric side. Further work on these lines is in progress.

These examples show that epidemiological work carried out, or in progress, gives good promise of providing workaday estimates of the frequency of different types of mental disorder in childhood, and the medical, educational and social concomitants. Clearly, however, further work is needed.

5. *Aetiology*. I think that we are on much less firm ground in regard to the aetiology of various forms of child maladjustment than we are in regard to the other matters I have mentioned. Some organic conditions are reasonably well understood. In other conditions, for example child psychosis, important misconceptions about aetiology, such as the view that child psychosis is caused by faulty rearing, have been shown to be untenable. On the whole, however, the classification of disorders according to supposed aetiology has not made much progress, and personally I find myself unconvinced by most of what I read on these lines. However, a similar situation exists in subnormality. The literature is strewn with papers purporting to explain the causes of mongolism, for example—from Langdon Down's vaguely formulated racial theory to the more recent but no better supported views about pituitary dysfunction or maternal shock. The only point to make in this connection is that classification of disorders by aetiology is important, but not all-important. Advances are likely to be slow in coming. And whereas a clinical classification based on behaviour, or symptoms, or on responsiveness to treatment is likely to be heuristically useful, however imperfect it may be, an inadequate theory about cause may be worse than no theory at all. For example, the classification of mental deficiency into primary and secondary amentia, according to their supposed aetiology, held up progress in this field for a long time. The words themselves explained nothing, though they appeared to explain everything. They left no questions to be asked. One day we will know much more about the cause of maladjustment in children; in the meantime there is much that we can do.

In conclusion, then, I think that, although there is a great deal to criticize in contemporary child psychiatry, the situation is not as bad as a hostile critic would make out. Now that funds for research are becoming more easy to get, we have the opportunity and the duty to begin systematic long-term studies of many aspects of our field. I have already mentioned some of the ones which I think important. Can I add to the list the need for research into the function of the child guidance clinics themselves, the effects of different types of residential school, hospital in-patient units and their alternatives, and the experimental study of different ways of using scarce mental health personnel?

SUMMARY

The mentally subnormal form the largest class of severely disordered children for whom special provision is made in the Mental Health Services. Mental subnormality is thus of great importance to child psychiatry. In spite of this, the subject has been much neglected by child psychologists and psychiatrists working in other fields, and by paediatricians, educationists and psychiatric social workers.

Research into mental subnormality has suffered from its isolation from other branches of medicine, psychology and sociology. Nonetheless a great deal has been

found out about the epidemiology, causes and treatment of mental defect. Our knowledge of this field compares very favourably indeed with that of the rest of child psychiatry, where too little attention has been paid to scientific problems.

The paper discusses the ways in which advances have been made in mental subnormality. Similar advances are possible elsewhere in child psychiatry, and, where systematic research has been carried out, it has already proved strikingly successful.

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DIFFICULTIES OF THE ORDINARY CHILD IN ADJUSTING TO PRIMARY SCHOOL

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I. PROBLEM

AT A TIME when primary education in Britain is under scrutiny, it is pertinent to examine the consumer's point of view. Few studies have been made of the problems faced by the ordinary child in coping with everyday school life. Educationists have been tireless in describing the situation as seen by adults, and latterly systematic observation and analysis have been applied to classroom interaction between teacher and child (Gallagher and Aschner, 1963) and between peer group and individual (Brinkmann and Brinkmann, 1963). Children have been asked their opinions on specific aspects, such as what constitutes good teaching (Taylor, 1962), and about their anxieties in tests and other situations (Sarason *et al.*, 1960); and there is an extensive literature on school phobia, well reviewed by Frick (1964). The present report is an analysis of difficulties which did not lead to outright refusal, encountered by ordinary children aged 6-11 in English schools and made known to their mothers.

That the emphasis is on difficulties is in no sense to discount the vast amount of good work being done in schools throughout the country. During our interviews many mothers made remarks such as "He loves school"; "can't get there quick enough"; "wouldn't miss a day"; "looks forward to returning after the holidays"; "is devoted to his teacher". Such testimony is heartening to receive. This report concentrates on the less satisfactory side of the picture because it is here that attention must be drawn if improvements are to be made.

The validity of parents' testimony in this field may be called in question. Mothers do not witness what goes on in school, nor can they be strictly impartial; their attitudes reflect their own school experiences, their feelings about education generally, their contacts (often very limited) with the principal and staff of their child's school, and the degree of their identification with the child. Nevertheless, to dismiss their testimony as worthless would be to ignore one side of a question on which truly impartial evidence is scarcely to be had. For teachers also, being human, select what they perceive; and children do not reveal all their feelings to them, or to any investigator operating in the school environment.

Parents commonly remark how little the child says about school life, even when he is patently enjoying it. But when he is not, his mother is the likeliest person to detect signs of tension and unhappiness, and to elicit the reasons as the child sees them. How far his reasons are well founded is a separate question which would require careful investigation in each particular case; this we have not been able to

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undertake. It is the child's view of the situation, as expressed to his mother and reported by her, with which we are here concerned.

II. METHOD

The sample. At the Centre for the Study of Human Development a sample of London children, recruited before birth and studied longitudinally with contact not less than once a year, have now passed through their primary schools. For details of sampling and data collection procedures see Moore, Hindley and Falkner (1954), and Moore (1959). For present purposes all those children are included for whom information was available at any given age from 6-11. Although born in one area, the sample so dispersed that the 164 children were scattered in 115 schools of all sizes, types and philosophies (excluding the radically progressive). Only 13 (8 per cent) attended private schools. Inevitable losses over the years have not materially altered the social balance of the sample, which, as will be seen in Table 1, continues to represent all classes of the urban population, though not in stratified proportions. Because of the demands of the programme, the mothers have to be co-operative and interested in their children. One might have expected their intelligence to be above

TABLE 1. SOCIAL COMPOSITION OF THE SAMPLE AT THE BEGINNING AND END OF THE PERIOD UNDER CONSIDERATION*

Father's occupational class at child's birth*	Age 6			Age 11		
	Boys <i>N</i> = 85 (%)	Girls <i>N</i> = 79 (%)	Total 164 (%)	Boys <i>N</i> = 75 (%)	Girls <i>N</i> = 64 (%)	Total 139 (%)
Class I	2.4	3.8	3.0	1.3	4.7	2.9
Class II	21.2	12.7	17.1	22.7	14.1	18.7
Class III	61.2	59.5	60.4	62.7	57.8	60.4
Class IV	11.8	17.7	14.6	10.7	14.1	12.2
Class V	3.4	6.3	4.9	2.6	9.3	5.8

*Registrar General (1950).

average, but their mean score on the Mill Hill Vocabulary Test (Form B) was 30.45, which corresponds closely to the median reported by Raven (1958) for subjects aged 25-45. The children's intelligence, as measured by the abbreviated version (starred items) of the Revised Stanford-Binet scale, Form L, at 8 years, is widely dispersed about a mean above the 1937 norms: boys' mean I.Q. 121.2, s.d. 20.5; girls' mean 111.5, s.d. 20.9. Comparative figures for the London school population are not available. The sex difference is significant ($P < 0.01$), and consistent with the boys' higher mean social class.

The data. Information was collected each year in the following way. Shortly before the child's birthday a form was sent to the parents enquiring about major

events in the child's life. These included any change of school, class or teacher, and any absence of two weeks or longer. During a subsequent interview the mother was asked about the child's reaction to any such change, and on returning after absence. She was also asked whether he had shown any dislike of school, been reluctant to go or voiced any specific complaints, at any time during the past year. If he had school dinners she was asked whether these had given rise to any trouble. At four ages (6, 7, 9 and 11) a question was inserted as to any complaints by the child about the school toilets. Any difficulty once reported was followed up by enquiry the following year.

In the present analysis disturbances are classified in eight areas, as follows:

- A. Reluctance to go to school, with or without explicit reason.
- B. Difficulties in child's relationship to teachers, including Head Teacher.
- C. Difficulties in relationships with other children in school.
- D. Difficulties relating to school dinners or milk.
- E. Dislike of school toilets.
- F. Difficulties relating to work.
- G. Difficulties relating to physical education.
- H. Miscellaneous troubles.

Three grades of severity were used in coding:

marked = severe disturbance extending over 2 months or more.

unqualified = intermediate, or duration unspecified.

milder = lesser disturbance lasting under 1 month.

In the illustrations given below, lower-case letters indicate the area of disturbance, + means 'marked' and - means 'milder' as defined.

The relevant information was extracted from the protocols, classified and graded independently by two assistants; all differences of interpretation were arbitrated by the writer. Severity was estimated conservatively; any unqualified coding represents a definite disturbance, and 'milder' codings imply some degree of emotional upset, not mere passing whims. Since the difficulty had to be verbalized by the child to the mother, recalled by her and reported to the interviewer who then discussed it with her, the chances of spurious problems reaching the coding stage are almost certainly less than the chances of genuine difficulties failing to do so: the incidences given can thus be taken as fair minimal estimates of the number of complaints made, and disturbances shown, by the children.

III. RESULTS

1. *Incidence of difficulties in general*

Table 2 shows, for boys and for girls at each age, the total number of disturbances of each grade of severity, and the average number of areas of difficulty per child. The falling trends, from 6-10 in girls and from 7-10 in boys, are doubtless due to adaptation and increasing confidence as the children get older. The average for girls is consistently a little lower than for boys.

Figure 1 presents in visual form the distribution of children by number of difficulties at each age. The proportion reporting difficulties in three or more areas decreases somewhat in both sexes, while the proportion having no difficulties increases in girls but not in boys. The sex difference in number of difficulties is significant only

TABLE 2. INCIDENCE OF DIFFICULTIES

		BOYS					
		6 yr	7 yr	8 yr	9 yr	10 yr	11 yr
No. of children	..	85	81	81	70	75	75
No. of difficulties							
marked	..	11	10	14	3	3	5
unqualified	..	49	67	50	44	42	31
milder	..	81	70	56	56	52	71
Total	..	141	147	120	103	97	107
Average no. of areas of difficulty per child	..	1.66	1.81	1.48	1.47	1.29	1.43

		GIRLS					
		6 yr	7 yr	8 yr	9 yr	10 yr	11 yr
No. of children	..	79	74	72	67	63	64
No. of difficulties							
marked	..	10	5	6	5	4	4
unqualified	..	47	41	43	38	37	29
milder	..	67	57	44	46	31	42
Total	..	124	103	93	89	72	75
Average no. of areas of difficulty per child	..	1.57	1.39	1.29	1.33	1.14	1.17

at age 10 (Kolmogorov-Smirnoff Test, $P < 0.05$). Table 3, showing the number of interviews at which *any* difficulty was mentioned, makes clear how few children go through primary school without encountering some disturbance thought worthy of mention by their mothers. The preponderance of mentions for boys over girls does not reach significance.

For closer study, each child's difficulties were scored (a) from 6-8 years, (b) from 9-11 years, and (c) for the whole period. In scoring, each 'marked' difficulty was counted 4 points, unqualified codings 3 points, and 'milder' difficulties 2; this reflected a subjective estimate of their relative importance. One missed interview in either 3-year period, or two in the 6 years, was allowed for by averaging each child's scores over the interviews completed; but any case lacking more than this was excluded. The total score for each period was multiplied by 10 to remove decimals; thus a score of 30 represents an average of one unqualified difficulty (3 points) per interview. These scores were used in the following analyses:

By interviewer. Two interviewers (both male psychologists) took part in the programme. No significant difference in mean or variance of scores for any period was found between cases interviewed predominantly by one or the other.

By sex and social class. Two-way analyses of variance by sex and social class revealed no significant interaction nor sex difference at any age (Table 4A). Variance attributable to occupational class was significant ($P < 0.05$) for the 6-8 year period, with little difference between Registrar General's classes 1/2 and 3 but a markedly lower incidence of disturbances reported in the manual working class 4/5; but

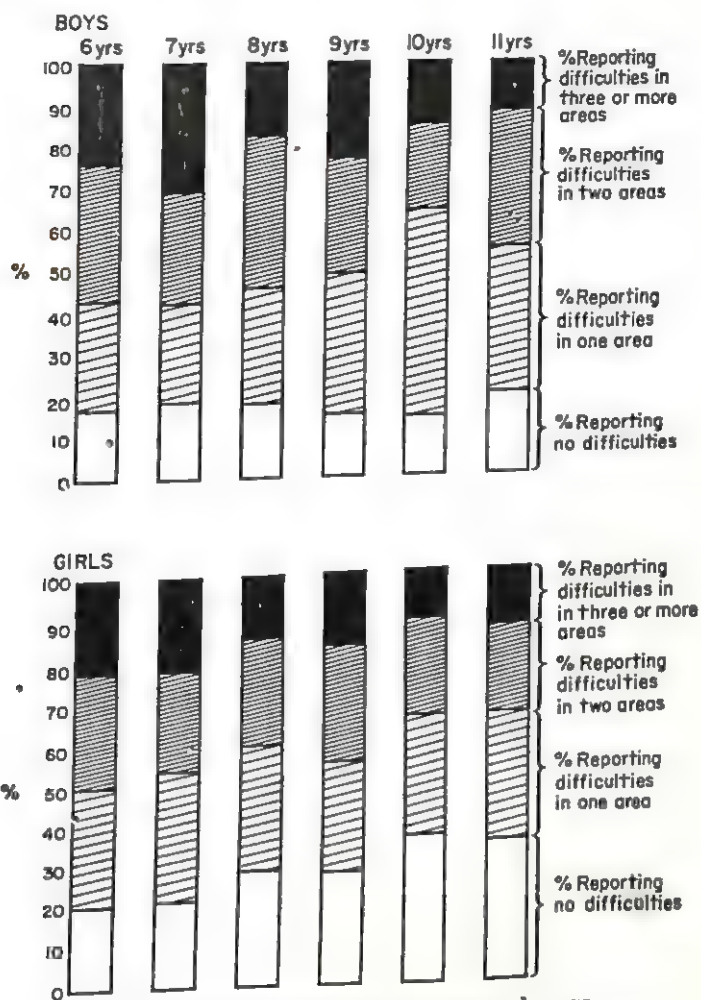


FIG. 1. School disturbance: incidence by age.

TABLE 3. NUMBER OF INTERVIEWS IN WHICH ANY DIFFICULTY WAS REPORTED (COMPLETE RECORDS ONLY)

No. of interviews	Boys	Girls
6	36	22
5	9	11
4	14	8
3	3	10
2	4	6
1	0	2
0	1	2
Total 67		61

Kolmogorov-Smirnov Test (two-tailed): sex difference not significant.

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8.9.70

TABLE 4. SCHOOL DISTURBANCE SCORES (NUMBER OF CASES IN BRACKETS)

		6-8 yr				9-11 yr				6-11 yr			
		Boys		Girls		Boys		Girls		Boys		Girls	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
A. By Sex and Occupational Class													
I-II	..	48.30	21.75	39.92	29.21	39.33	18.31	37.17	28.08	44.21	15.77	38.33	27.03
		(20)		(13)		(18)		(12)		(19)		(12)	
III	..	44.86	24.60	39.43	28.28	34.30	19.25	26.90	22.77	39.83	19.34	34.23	24.09
		(51)		(44)		(47)		(39)		(48)		(40)	
IV-V	..	30.85	24.57	27.24	18.93	35.11	29.45	33.87	24.88	33.20	26.05	30.94	14.52
		(13)		(17)		(9)		(15)		(10)		(16)	
Total	..	43.51	24.33	36.72	26.78	35.62	19.92	30.35	23.98	40.05	19.52	34.18	22.60
		(84)		(74)		(74)		(66)		(77)		(68)	
Sex x class interactions n.s.													
Sex differences		n.s.				n.s.				n.s.			
Class differences		P < 0.05				n.s.				n.s.			
						n.s.				n.s.			
B. By Sibship Status at 6 yr													
Only	..	54.12	27.08	41.30	25.27	41.53	26.22	32.67	25.37	49.88	25.41	37.10	26.83
		(17)		(10)		(15)		(9)		(16)		(10)	
Eldest	..	41.30	21.05	33.23	32.88	35.00	17.98	29.90	21.14	39.00	16.99	33.40	25.53
		(20)		(13)		(19)		(10)		(19)		(10)	
Middle	..	32.27	24.48	24.00	17.68	29.57	18.40	24.35	20.36	28.80	15.69	24.17	13.51
		(15)		(19)		(14)		(17)		(15)		(18)	
Youngest	..	44.22	21.20	44.25	27.09	35.92	19.12	33.20	27.26	41.22	16.56	39.47	23.50
		(32)		(32)		(26)		(30)		(27)		(30)	
Sibship differences		P < 0.01				P < 0.10				P < 0.05			
						n.s.				n.s.			

insignificant for 9–11 years and for the total period. If the working-class scores were an underestimate owing to poor communication (between child and mother, or mother and interviewer) one would expect the difference to persist. Since, as we shall see, the professional class children have more difficulties with other children and to some extent over questions of work, it seems likely that higher parental expectations and internalized standards cause them more anxiety in the early school years, which is gradually mitigated with increasing age, confidence and adaptation to the (often socially mixed) peer group.

• *By intelligence.* The correlation between I.Q. and total school disturbance was insignificant in both sexes when the effect of social class was partialled out (boys: $r_p = 0.15$; girls: $r_p = 0.19$).

By mother's education. Analysis of variance revealed that this was not related to school disturbance for any period in either boys or girls.

By private vs. public education. The 13 children who attended private schools showed no significant or systematic difference in amount of disturbance from children of comparable social background attending state schools.

By sex and sibship. Boys and girls were grouped according to their status as only, eldest, middle or youngest children in the family at the age of 6 (Table 4B). For the 6–8 year period, analysis of variance of the boys' scores showed a significant variation, with 'only' boys having the most disturbances and 'middle' boys least ($F = 4.362$, *df.* 3, 80: $P < 0.01$). With the girls the variation was of borderline significance ($F = 2.604$, *df.* 3, 70: $P < 0.10$), with the 'youngest' having slightly more disturbance than the 'only' girls (both being lower than 'only' boys) and the 'middle' again having least. For the period from 9–11 years the pattern remained unchanged, but the variation between groups decreased to insignificance. For the total period it reached the 5 per cent level in boys but was insignificant in girls. Hersov (1961a) found only and youngest children to be the most prone to school phobia.

2. Specific difficulties

Age trends of each type of disturbance for boys and girls are shown in Figs. 2 and 3. These are given in terms of percentage incidence, (i) in total irrespective of grade of severity (upper lines) and (ii) excluding the 'milder' category for a more stringent criterion (lower lines).

The number of difficulties elicited by interview is well known to depend in part on the questions asked. Since the questions in this study varied in directness from one area to another, comparisons of incidence as between areas have little meaning. While overestimation is unlikely for reasons already given, it will become apparent that the probability of underestimation is greater in areas C, D, F and G than in areas A, B and E. But as the basic questions were the same for all mothers and throughout the age period, comparisons by age and sex within each area can be regarded as valid.

A. *Reluctance to go to school.* The basic question was "Has your child shown any dislike of school at any time in the past year?" This commonly elicited a statement of the children's general attitude, whether positive, indifferent or negative, and sometimes specific problems as well. The latter were coded in the appropriate area; a coding of A was added only where the problem led to a dislike of going to

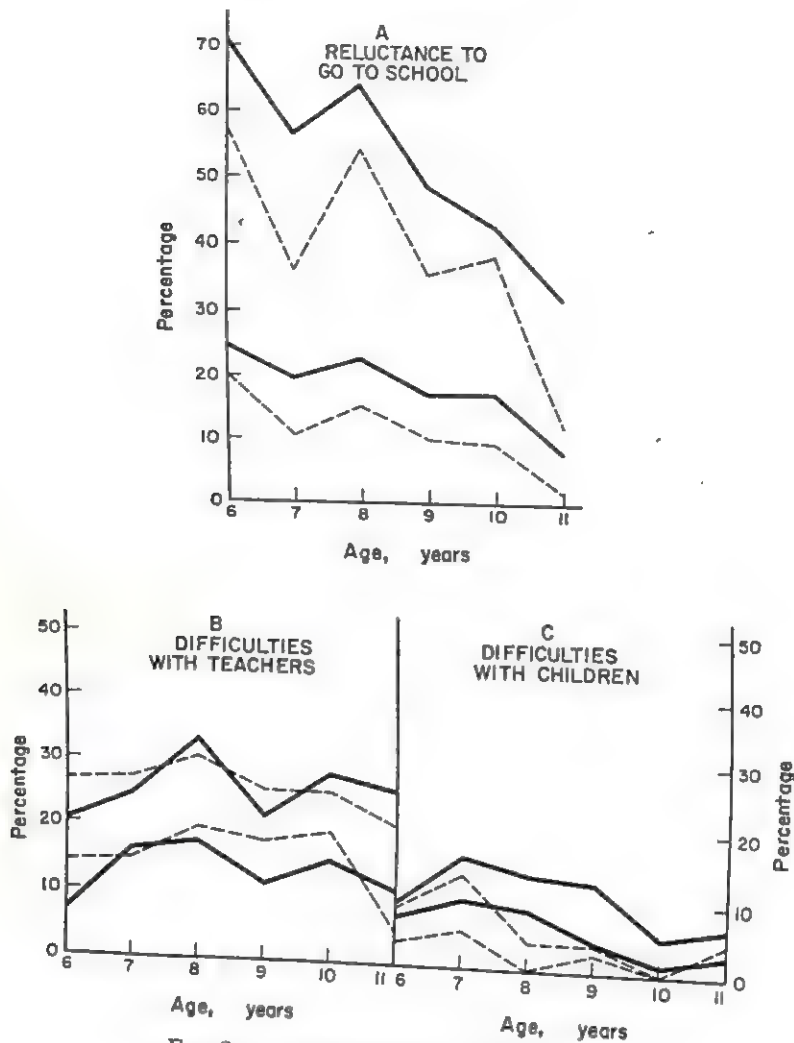


FIG. 2. Age trends of specific difficulties.
 — Boys
 - - - Girls
 Upper lines—All difficulties
 Lower lines—Excluding milder difficulties.

school. In other cases the mother knew of nothing at school to account for the dislike; in some overdependent children the difficulty was clearly in leaving home and coping with the pressures of the wider world. These problems were also coded *A*. This area is therefore unlike the others in reflecting the child's general attitude rather than any particular aspect of school life.

Examples

Boy 522, 8yr "Never wants to go to school; feels he wants to be sick, or go to toilet. . . . But insists on being on time, won't take notes to teacher, or ask her anything. . . . Finds children rough and noisy." (Coded *a+*, *b+*, *c*.) (This feeling had existed in mild form at the child's first school, was aggravated on transfer to this larger, rougher school and persisted at a somewhat lower intensity to 10yr)

- Boy 694, 8yr "Dislikes school in general. Very slow in getting up and dressing on school mornings. Doesn't feel very well at least once a week. Has bitten nails right down since transfer from previous school. Dislikes sums, is afraid of not doing them well." (Coded a, f—.) (Nervous, overdependent child. Difficulty had started at previous school and persisted throughout.)
- Boy 852, 8yr On transfer to a preparatory school "cried every morning for a month. Said he hated it, had no friends, disliked being called by surname. . . . Felt it was a long way from home, afraid bus would break down. Better when Mother learned to drive and collected him. Made friends in about one month, and became more cheerful." (a, c.) But never really liked school; at 10yr: "Any excuse not to go; says he loathes it, though goes now without fuss. Says he wouldn't prefer any other school, just dislikes schooling generally." (a—.)
- Girl 632, 7yr This child normally enjoyed school, but on returning after nearly a term's absence owing to a series of infections, feeling nervous about the amount she had missed, her mother reported: "She found her beloved teacher absent. The unimaginative Headmistress, exceptionally stern and cold, only made her worse. Thankfully another teacher had the right touch, and after a week of nerve-racking scenes which almost reduced me to a nervous wreck, she settled down as if by magic to enjoy school again." (a, b—). No recurrence of trouble.

Figure 2A shows that this kind of trouble affects a majority of children in some degree at 6 years, decreases at 7, rises to a secondary peak at 8 and then dwindles steadily to 11, though even then one boy in three is still showing some reluctance. The increase at 8, if significant, is probably due to transfer from infant to junior school, where expectations tend to be higher and discipline stricter. Hersov (1961b) found a peak of school refusal following this transfer.

Whether we consider real aversion, as indicated by the lower curves, or mere reluctance, included in the upper ones, a negative attitude to school is shown consistently by more boys than girls at every age. The difference in total scores for this area is significant by the *t*-test ($P < 0.01$). Analysis of variance shows that it is not accounted for by social class differences in the sampling; in these scores class differences are insignificant. The sex difference is consistent with boys' more frequent recourse to truancy or outright school refusal (Hersov 1961a). Several possible explanations suggest themselves. Is it that boys, being more active, find it harder to accept the immobility enforced, much of the time, in most schools? Or that they rebel against the curtailment of their freedom of choice, while girls conform more readily? And are there in addition, as Levy (1943) found, more boys than girls whose relationships with their mothers are so mutually dependent that they find it difficult to exchange the safety of home for the hurly-burly of school life?

B. *Difficulties with teachers.* These were elicited by the neutral question, "Has he changed his teacher this year? How did he take the change?" supplemented as necessary by enquiries into past and present relationships. Some complaints came from children who had incurred punishment, but at least as many from the relatively innocent who shrank under discipline intended to impress the recalcitrant few. Shouting, smacking and grumbling; favouritism and reprimands perceived as unfair; failure to make work interesting and failure to explain clearly were among the commonest complaints. (But children's dislike of unsuccessful teaching is easily matched by their enthusiasm for the teacher who succeeds in capturing their interest and affection.)

Examples

- Girl 744, 8yr "Child feels she can do nothing right with this teacher; lost interest in work and became very nervous, sobbing in bed, twisting her hair, biting her nails and not wanting to go to school. Considerable improvement after Head spoke to the teacher, who was known to have serious personal difficulties, tended to have a 'down' on certain children and talked quite inhumanly to them." (Coded b+, a+.)
- Girl 888, 8yr "Reluctant to go to school while with previous teacher; used to complain of headaches and tummy-aches. The teacher was very severe, used to pull children's hair. Child wanted to change school." (Coded b+, a.) This child thoroughly enjoyed school with certain teachers, but at 10yr: "Says her new teacher is 'miserable', never enjoys a joke, grumbles and smacks." (b.)
- Boy 586, 9yr "Likes his new teacher less than the previous one; she is unresponsive, never praises, and criticizes him in class. The Headmaster is given to ranting and shouting at the children, who talk about him with no respect at all." (b.)
- Boy 758, 11yr "Liked former teacher very much. Dislikes present one: says he leaves the class to itself, doesn't teach enough. Child is worried lest he be told off after occasional days' absence due to tummy upsets." (b.)

Figure 2B shows that the peak for complaints about teachers comes at 8 years, when they are reported from one child in three, perhaps again because of the sterner attitude in the junior school; but the incidence never falls below 20 per cent, although serious disturbances are fewer. There is no significant difference between boys and girls, nor between social classes.

C. *Difficulties with other children.* Specific enquiry in this area was made only if the child had been transferred to a different group; but mothers could be expected to report any real problem in discussing adjustment to school generally. Trouble with contemporaries is commonly experienced by the overdependent child, especially the boy who lacks a satisfactory relationship with his father (Levy, 1943). Complaints are usually of roughness or bullying which tends to be attracted by the timid or over-fastidious child, or the 'teacher's pet'. Unpopularity for other reasons, such as bossiness, is occasionally reported. In a few schools, prefects or older monitors invested with authority are feared by the younger children; but this occurs less commonly than in the secondary school. Unhappiness due to loss of friends on re-grouping is sometimes mentioned, but appears to be ephemeral as a rule.

Examples

- Boy 852, 7yr "Child complained of a boy who kept threatening to hit him. He went through a phase of wanting mother to meet him daily, which she did for 4 or 5 weeks. Trouble ceased when he made friends with the boy." (Coded c.)
- Boy 522, 7yr "Both he and his brother (aged 8) are scared stiff and hate the school. They fear the monitors who are 'everywhere' and the atmosphere generally." (a+, c+.) Difficulty persisted to 10yr.
- Boy 586, 7yr "Found it difficult to face up to the rough children at his large new school; dislikes the long lunch-hour break. Sometimes comes in crying, saying he has been hit, or a bully has broken something of his." Mother added: "Perhaps he invites bullying; he has no sense of humour, just like his father." (c.) The same complaint was made at 9yr, but on transfer to another school, he declared that the boys were rougher, and that there had been only one rough one at the previous school. At 11yr, he still complained of the boys, would not stand up for himself and had no particular friends. At home, where there was much parental friction, this boy was extremely aggressive to his mother.

- Girl 832, 6yr "Not keen on school, and reluctant to stay for dinners. Always wants it to rain, so she need not spend the hour in the playground with the rough boys." (a, c.)
- Girl 878, 7yr "Put up to a higher group twice, leaving a friend behind—cried about this 1 or 2 days. Doesn't mix easily. Says boys are rough." (c-.)

The incidence of this type of complaint (depending mainly on spontaneous information) is not very high (Fig. 2C); it may be underestimated owing to the lack of a specific question, but it may also be that most children prefer to make their own way with their contemporaries without adult intervention. Difficulties are reported for 16 per cent of the boys and 13 per cent of the girls at the peak age of 7 yr, drop sharply between 9 and 10, and finish around 6 per cent at 11, when the children are the oldest in the primary school and have generally had several years to find a *modus vivendi* with their group.

The boys' curves remain consistently higher than the girls', the sex difference in total scores being significant by the *t*-test: $P < 0.05$, and recurring in each occupational class. The demands of the male peer-group may well be more exacting, involving as they do a degree of toughness impossible for a boy in the absence of an adequate model for male identification, or for one who has subordinated his aggression to the will of a domineering mother.

More difficulties in this area were experienced by children from socially superior homes (Table 5). This probably reflects the earlier freedom of the streets accorded to the working-class child.

TABLE 5. DIFFICULTIES WITH OTHER CHILDREN, BY OCCUPATIONAL CLASS

Occupational class	N	Mean score
I-II	31	3.23
III	88	2.09
IV-V	26	1.00

$$F = 3.178 \quad df. 2, 142 \quad P 0 < .05$$

D. *Difficulties relating to school dinners and milk.* The question was asked: "Has he stayed to school dinners? Has this given rise to any trouble?" Difficulties were coded conservatively, ignoring the occasional grumble which is generally regarded as 'fashionable'. Children's food problems are to a large extent sorted out when they stay at school for dinner, those that disappear in the group situation probably representing a form of self-assertion against the mother, while the more deep-seated aversions and fastidiousness are often aggravated by the pressure (even if gentle) to eat what is offered. Dinner helpers are not always the best people to handle such problems. Some children are put off not by the food itself but by the way the meal is served, by its appearance or smell, or by the crowds, noise and sense of hurry. Others simply prefer their mothers' cooking and familiar menus. But others again enjoy the dinners and their only complaint (discounted for our purposes) may be that they don't get enough. A different reason for preferring to go home for dinner, especially

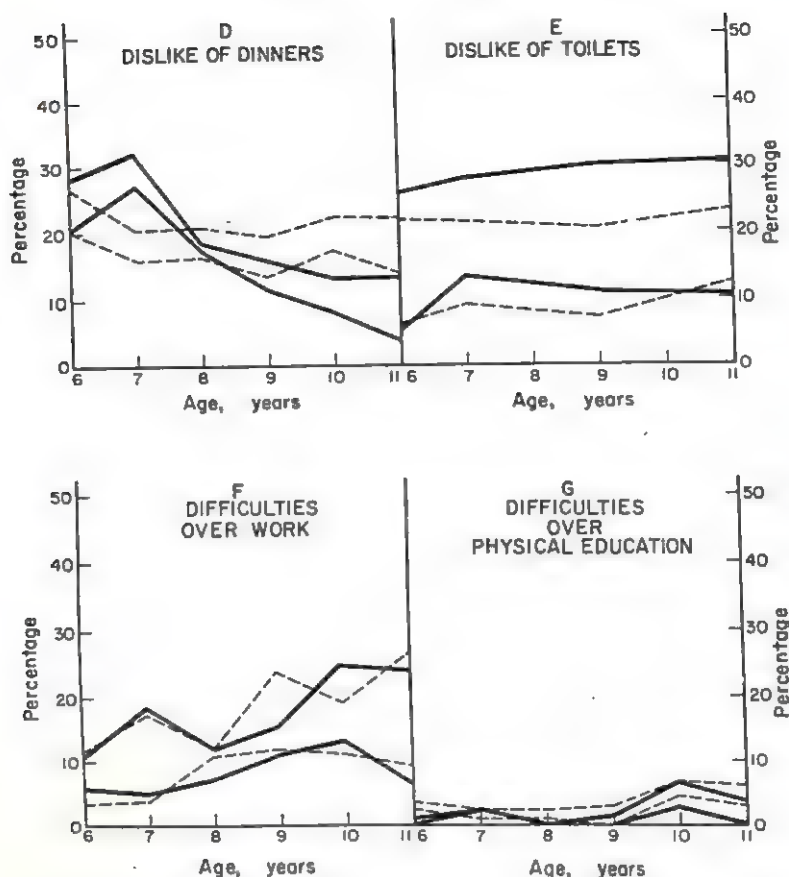


FIG. 3. Age trends of specific difficulties.

— Boys
 - - - Girls
 Upper lines—All difficulties
 Lower lines—Excluding milder difficulties.

at the infant stage, is that some children find the unbroken school day too long, and the long after-dinner playtime too much of a strain; while for the extraverts this may be the best part of the day.

Examples

- Boy 558, 7yr "Was never keen on school food. A natural vegetarian who never wants large meals." Allowed to come home for some months; then to stay again at own request. No further complaints until 10yr, when "occasional refusal of foods disliked has caused adverse comments from teachers, who say 'You must eat everything up', and from dinner lady, who, when asked for a little, gives much and vice versa." (Coded d.)
- Boy 734, 7yr "Doesn't like the way the meal is served, and some of the food. Table manners getting bad: clutches his plate—says he has to at school, or it disappears! At 8yr and 9yr, "Complains quite often, made to eat things he dislikes. But at other times, seems to prefer school cooking to mine." (d.)

- Girl 584, 7yr "Strongly objected to being spoon-fed by teachers to hurry her along." (d+.) As her manners were also becoming very bad, dinners at school were discontinued, but resumed later. At 11yr, "complains that the serving ladies have favourites." (d-.)

As some children alternated between periods of dining at school and at home, no estimate was made of the number actually receiving school dinners in any year. Percentage disturbance shown in Fig. 3D is based on the total sample, and would have been proportionately higher had home diners been excluded. Even so, complaints were recorded from nearly one-third of the boys at 7 yr, and from over one-quarter of the girls at 6 yr.

The sexes show different age trends. After a peak at 7, the boys' curve drops steadily. The girls' curve is nearly horizontal except for a slight drop from 6-7. The boys show the greater frequency of disturbance at 7, the girls thereafter. Explanation of these differences would require more detailed analysis. It may be that the significance of food in relation to emotional development differs for the two sexes. There was no significant social class difference.

E. *Dislike of school toilets.* This occurred with unexpected frequency in our records. The direct question "Has he ever made a fuss about using the school toilet?" was put to all the mothers at 6, 7, 9 and 11 years, as a result of their spontaneous mention of the problem in many cases at the 5-yr interview, and earlier, at nursery school. Some children complained that the lavatories were dirty, wet or smelly; others resented the lack of privacy where the doors could not be secured; some would not go in a crowd at break, but were loth to ask permission during lessons, especially if they also had to ask for toilet paper. Not a few children refused to use the facilities, returning home in considerable discomfort at the end of every morning and afternoon; constipation or loss of bladder control occasionally resulted.

Examples

- Boy 882, 7yr "Won't use school toilets. He likes to have soap and water to wash his hands afterwards." Mother visited the lavatories and found them filthy, in an otherwise good school. Trouble continued throughout. (Coded e+.)
- Boy 508, 9yr "Dislikes school toilets. Will only use them if absolutely necessary, because no privacy, no locks, and no toilet paper provided." (e.) At 11yr: "Lost control of bladder on way home twice." Never otherwise enuretic. (e.)
- Girl 718, 11yr "Dislikes W.C.s because doors are low enough for other children to look over the top. Won't use them if it can be helped; dashes home with a full bladder." (e.)
- Girl 660, 7yr "Dislikes the toilets because they are not clean and she has to ask for paper." (e.) At 8yr: "Avoids them as much as possible; occasionally constipated as a result. No bolts; she wants privacy." (e+.) Still troubled at 11yr.
- Girl 892, 6yr "Wets pants periodically, only at school, because afraid to ask to leave classroom. Dislikes being conspicuous in any way." Trouble continued to 6½yr; improved when Mother obtained teacher's permission for child to leave the room without asking. (e.)

In Fig. 3E the incidence of complaints is plotted only for the four ages at which the direct question was asked. Coding was conservative; fussing 'rarely' or 'sometimes' was scored minus and the lower curves include only frequent complaints with or without avoidance. It will be seen that the proportion of children complaining remains roughly constant, rising a little with age, about one 11-year-old in four

protesting at times and between 10 and 12 per cent experiencing a real problem.

Although neither sex nor social class differences were significant in this area, their direction is interesting. In each class, boys made more complaints than girls; and working-class children of both sexes complained more than those from professional homes. The mean score for working-class boys was 7.0; for professional class girls, 1.92. This was contrary to expectation, but may reflect poorer facilities in underprivileged areas.

This is a problem that could be remedied relatively simply on Head Teachers' initiative, even in old accommodation, by the provision of a coat of paint, some sweet-smelling disinfectant, simple bolts for the doors, and a cleanliness campaign, which, it seems, would receive the enthusiastic support of many children.

F. Difficulties relating to work. No specific question was asked concerning work, which usually came up in connection with the child's response to teachers or general adjustment at school. Codings were entered only where the child himself expressed worry or marked distaste concerning one or more subjects or aspects of the work; not for backwardness as such, nor for failure to worry where adults felt it would be appropriate to do so. There is inevitably some overlap between difficulties with work and those relating to the teacher. Liking and dislike of a specific subject often fluctuate according to the particular presentation. In the primary school, because all but the specialized subjects are usually taught by the class teacher, a child's relationship to this teacher can colour his whole attitude to work for an entire year.

Even though he likes the teacher, a child in a large class may plod on for a long time without understanding the processes he is supposed to be mastering, refusing to ask for help not so much out of fear of consequences as out of reluctance to admit ignorance, and sometimes a fear of ridicule by classmates.

Marks and class places cause worry and distress to some children, whose parents, far from exhorting them, generally find themselves trying to lower the child's perfectionist standards. Others may take the daily work in their stride but dread examinations or tests of any kind. The bogey of the 'eleven-plus', however, is mentioned seldom as an ordeal in itself but very frequently as a cause of undue pressure, excessive homework and overwrought teachers in the last two years of junior school. As much as two hours' homework a night is sometimes expected of children of ten and eleven. When difficulties arise, parents find themselves in a quandary: to offer help is to interfere and perhaps to confuse; to withhold it may let fatigue and frustration make learning impossible; to call a halt and write to the teacher is a step often stoutly resisted by the child, who would rather fail than be made an exception.

Other difficulties reported include idiosyncratic problems such as slow working tempo, inability to concentrate and specific learning blocks. Finally, there are children who find the work too easy and get bored, especially if they have to go over it a second time—as do some who, reaching the top of the primary school before the official age for transfer, are compelled to repeat an entire year's work.

Examples

Boy 768, I.Q. 128 At 8yr, "He was worried about being behind with reading owing to repeated absences; worry brought on his asthma; a vicious circle. I had to fight to get him to school, and then he would have an attack. It lasted 4 or 5 months, till at last

- he told me it was the reading. The teacher helped; now he reads well and likes it." (Coded f+, a+.) At 10yr: "He now has difficulty with sums, but is good at other subjects. He doesn't want me to help him; teacher is impatient and hits him with a ruler; so I will try to find an older child to help him in the holidays." (f, b.)
- Boy 560, I.Q. 132 At a private school. At 8yr, "He likes but fears the teacher, and complains that they work far too hard." Mother agreed there was too much homework—2 hours a night—"but I can't do anything about it. The teacher tends to frighten them into working. If he hasn't done his homework well enough he worries and cries about it." (f+, b.)
- Girl 698, I.Q. 114 At 8yr, "She likes her new teacher and is keen to please her, but has become very anxious about homework and about sums at school; cries over the sums, even after getting them all right." (f.) She gradually relaxed and became less over-anxious; but at 10yr: "They are under pressure for the 11+. She is a slow worker and worries about subjects involving written answers; not arithmetic now. She is afraid of appearing stupid." (f.)
- Boy 542, I.Q. 129 Had always been extremely slow in everything he did, and given to day-dreaming. He attended a private school. At 10 yr, "Headmaster intends to give him a speed test daily, and reward him with sixpence for good results. His work is accurate but very slow, and he worries when told he will not pass the 11+ unless quicker. Father helps him with arithmetic every evening—homework takes 1-2hr—but child can't concentrate on it and finishes in a furious temper in which he beats his own head." (f+.)
- Girl 924, I.Q. 118 On change from B to A stream at 8yr, "Dislikes no longer being top of the class. If she can't get 20 out of 20 she is upset and cries: 'I'm no good.' Afraid to ask questions of the teacher, who shouts, until I went to see her. Teacher now encourages her, gives her stars, etc." (f.)

Figure 3F records that the incidence of complaints about work rises, as would be expected with the gradual increase in pressure, reaching 25 per cent in boys at 10 and girls at 11; while definite disturbances in this sphere affect 10 per cent of this predominantly intelligent sample from 8-10 years. All these difficulties were spontaneously mentioned by the mothers; had a direct question been asked, the figures would certainly have been higher. Boys and girls are affected about equally, and although professional-class children score highest, class differences do not reach significance.

G. *Difficulties relating to physical education.* These were not elicited by any direct question. They occasionally arise from a distaste for physical exertion, usually in overweight children; more often from fear of getting hurt, or fear of water when taken swimming; from a feeling of awkwardness or inability; or from dislike of the teacher. But the commonest complaint is dislike of undressing. This is sometimes attributed to cold, sometimes to modesty; and younger children may have trouble in tying ties and shoelaces or getting ready in the time allowed. Perhaps too, taking off clothes, which brings to confident children a sense of freedom and well-being, amounts to shedding the armour without which a more anxious child feels defenceless.

Examples.

- Boy 850, 7yr "Dislikes P.E. though active and athletic. Partly due to the teacher, but also (8yr) dislikes taking off his vest." (Coded g.)
- Girl 704, 10yr "Disliked P.E. as she didn't want to undress down to vest and knickers. Allowed to do it with dress on after an illness, and has continued since." (g.) At 11yr, "No complaints about undressing since swimming began—her favourite activity."

- Girl 674, 11yr "Asks to be excused from sports. Hates being pushed around or hurt in any way." (g.)
- Girl 878, 6yr "Dislikes P.E. because she cannot easily fasten her shoes." (g.) But at every subsequent interview she was said to dislike undressing.

As Fig. 3G shows, spontaneous complaints connected with physical education are few—under 5 per cent up to 9 years, with 7 per cent as a maximum at 10. This speaks well for the teaching, as well as reflecting most children's healthy pleasure in games and exercise. The girls' curves are consistently a little higher than the boys', but incidence is too low to yield significant sex or class differences.

H. *Miscellaneous problems.* Difficulties which did not fit into one of the seven areas already discussed were too few to graph, affecting only 1 per cent of children. Examples follow:

- Boy 634, 6-7 yr Eight teachers in two years. "Child confused; doesn't seem to learn." (f, h.)
- Boy 810, 10yr "Dislikes school buildings." (h—.)
- Boy 756, 10-11yr "Hates violin lessons and school orchestra", though musical and learning guitar for pleasure. Headmistress insisted he continue with the violin, and Father agreed they should not 'give in'; but lessons were finally abandoned because of battles over practising and no progress. (h.)
- Boy 724, 7yr On transfer from a school where he had seen his siblings at playtime, "felt lonely and lost when separated from them at new school. Settled after two weeks." (h—.)

3. *Persistence of difficulties*

The longitudinal nature of the study makes it possible to determine how persistent various difficulties tend to be. Taking only the 128 children with complete records for the six years, Table 6 shows, for each area of disturbance, the number complaining on varying numbers of occasions from none to six. All degrees of severity are included.

Combining the figures for the two sexes, we have a total of 520 problems reported. Of these, as shown in the last column, 41 per cent were mentioned once only. One-third cropped up three or more times, including 35 problems which were reported in five or all six interviews. Twenty-three of these very persistent problems concerned a general dislike of school or reluctance to go (Area A), which in this sample of 128 indicates some degree of chronic aversion from school in every fifth or sixth child.

The bottom row of the table shows the average number of times per child that difficulties are mentioned in each area. After the general attitude of reluctance, difficulty with teachers is the next most recurrent problem, but in some cases this amounted only to a temporary difficulty of adaptation to each fresh teacher. Conversely, the infrequency of persistent problems relating to other children may be attributed to the fact that the majority pass through primary school in the same group, or with only one change on transfer from infant to junior school, and become accepted by their classmates. Dinners and lavatories can be constant or recurrent sources of conflict and emotional discomfort, partly no doubt because they involve the deepest levels of feeling, stemming from early infancy and nearer the surface in childhood than in later life. Difficulties with work might have been expected to recur every year for some children; that only one was reported more than four times may be due to our failure to enquire specifically at each interview.

TABLE 6. RECURRENCE OF DIFFICULTIES: NUMBERS OF CASES

Sample: all cases completing 6 interviews. 67 boys and 61 girls = 128

Number of times reported	A Reluctance		B Teachers		C Children		D Dinners		E Toilets		F Work		G Phys. Educ.		H Miscellaneous		Boys	ALL Girls	AREAS Total	% of all problems											
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G															
0	..	3		7	14		13	86		42	20		21	31		40	29		26	57		48	59		59	-	-	-	-		
1	..	15		9	21		20	20		15	19		18	10		8	16		15	7		12	6		2	114		213	41.0		
2	..	8		21	16		14	7		4	18		9	8		4	12		9	3		0	1		0	73		99	134	25.8	
3	..	12		11	13		8	3		0	6		6	6		3	8		8	0		0	0		0	48		61	84	16.1	
4	..	11		8	3		5	1		0	3		5	9		4	2		3	0		0	0		0	29		36	54	10.4	
5	..	10		3	1		1	0		0	1		1	2		2	1		0	0		0	0		0	15		25	23	4.4	
6	..	8		2	0		0	0		0	0		1	1		0	0		0	0		0	0		0	9		8	12	2.3	
Total number of times mentioned	209			143	109		97	47		23	90		85	96		51	77		69	13		17	8		2	288			232	520	100
Total (both sexes)		352				206			70			175			147			146			30			10				1136	mentions		
Average number per child		2.75				1.61			0.55			1.37			1.15			1.14			0.23			0.08			8.88 mentions per child		2.18 mentions per problem		

The figures in the lower right-hand corner provide an overall estimate for the whole period: over all six interviews, 8.88 mentions of difficulty occurred in relation to the average child, and the average problem was mentioned rather more than twice.

IV. DISCUSSION

1. *Validity*

Some aspects of the validity of these data have already been discussed. It must be borne in mind that the evidence is based not on verified happenings but on the perceptions of children and parents. But perceptions determine attitudes and behaviour, and therefore are well worthy of consideration in their own right. Since parents' attitudes to school certainly affect those of their children, both merit study; but it is a weakness of the present material that the two cannot be unravelled. For this purpose children would also have had to be interviewed; this was not done before the age of twelve.

The mothers stood to gain nothing from deliberately exaggerating difficulties, since they knew that the research policy was never to intervene. Many of them, indeed, had a tendency to play down the child's problems rather than the reverse. It was for this reason that the questions asked were specifically about difficulties and dislikes, since it had been found that open questions of the form "How does he like school?" tended in general to produce conventionally positive replies.

2. *Origin and outcome of difficulties*

As already noted, certain types of difficulty, especially reluctance to go to school where the child can give no specific reason, difficulty in mixing with other children and dislike of physical education, are characteristic of overdependent children. Overdependence is a sign of faulty family relationships, usually traceable to the failure of one or both parents to reach adequate emotional maturity (Levy, 1943). The origins of this failure have generally to be sought in their relationships with their own parents, and so on. This is the pattern very commonly discovered in cases of school refusal (Hersov, 1961a; Davidson, 1961; Frick, 1964) and confirmed in the histories of a number of our subjects.

But the vicious circle is not necessarily unbreakable. A wise teacher who takes a personal interest can often help an over-dependent child to master his fears, thereby in some measure freeing him from his parents' neuroses. That this does happen is attested by some of the examples already given, and by these additional follow-ups:

Boy 522, whose intense fears were noted under headings A and C, was made Head Prefect in his last year of Junior School. At 11yr the psychologist commented: "He seems to have received a real boost . . . which is reflected in his increased confidence, somewhat decreased fears and partially successful efforts to stop nailbiting. He still has marked anxiety beneath the surface", but took the transfer to secondary school in his stride. At 12 yr, "He loves the new school because the teachers treat them as grown-up, talk to them seriously but also joke. Likes the discipline. No trouble with other children."

Girl 620, very dependent on her nervous and ailing mother, attached to each teacher in turn and upset by every change, rejected school dinners and found work difficult, but with considerable help from teaching staff she finished in the A-stream. Took to Secondary Modern school very well: at 12yr, "really loves it, except the arithmetic." Much more confident.

Boy 576 had a mother who found great difficulty in leaving him each morning at nursery school. On transfer to infant school she reported: "He could not bear to leave me the first six weeks, but they said he cheered up as soon as I left. Then he decided he liked it. Finds the boys rough, but so is he. Very fond of his teacher, but worries about writing and spelling, and has started twitching his face, blinking and picking his nose."

At 7yr, "disliked the discipline and harder work imposed by a new teacher, and objected to going to school for 2 months. She won his confidence by giving him little jobs." The next two teachers were less successful; he joined a tough gang and played truant four times. At 10yr he was put with a young, energetic male teacher who taught him to box and captured his interest in work. Truancy ceased, as did complaints except about writing lessons. At 11yr was working well, enjoying school and made Head Prefect. Took some time to adapt to a less distinguished role at Grammar School.

We have seen that children adapt progressively during the six years (Figure 2A); yet 18 per cent never became thoroughly reconciled to school throughout this period. These were not all over-dependent children. In some of the cases cited the school atmosphere was clearly not helpful.

It is possible to attribute some of the more specific difficulties to fussiness, oversensitiveness, or contrariness in some of the children; or more generally, to the impossibility of catering for all tastes and personal idiosyncrasies. But there is no denying that many of the problems arise from faulty school organization, inappropriate attitudes in teachers, and underlying these a system of social pressures which makes insufferable demands on both teachers and taught. Wall (1955) and other writers have maintained that much maladjustment can be avoided, and Burt and Howard (1952) have shown that existing maladjustments can sometimes be eradicated, by adapting education to the child's needs.

3. *Significance*

Yet should such stress be laid on the needs and difficulties of the individual child? Since frustrations cannot be eradicated from life, should children not learn to face them in school as a part of the educative process? The best brief examination of this familiar argument that I have encountered comes from Tibble (1959). He shows how maladjustment in some sense is an inevitable concomitant of change, and therefore essential to the continuation of society. Every child today has enough to cope with in finding some sort of adjustment amid the conflicting attitudes of adults around him on most of the major issues of life—war, aggression, sex, work, religion and so forth. Indeed, the more aware he is, the harder this becomes. Tibble concludes: "It is our special task as educators to try to ensure that the maladjustments are as far as possible made serviceable".

'Serviceable maladjustments' imply a resourceful and resilient personality. How can this best be developed? Neither by smoothing away all difficulties, nor by adding to them gratuitously, whether by a punitive attitude, destructive criticism, or the equating of work with imposition; rather by fortifying the child in the belief that he can indeed overcome difficulties and find solutions to the problems he meets both in work and in personal relationships.

Good teachers know this and practise it almost unconsciously as far as their conditions of work permit. Many schools nowadays are happy and exciting places to which children return eagerly day after day to find out, to master skills, and to be

members of a purposefully active group. In such a school, as described by Hemming (1948), pupils and staff can perceive that their individual needs are not opposed to, but congruent with, those of the community. This is a great achievement; only it throws into deeper shadow the less happy school.

Children cannot learn effectively if they are frightened, angry, bewildered, or bored. Yet these states are too often produced and even condoned in the name of discipline or the exigencies of the syllabus. Nor are they likely to learn good manners and respect for others by being shouted at, slapped, or made the butt of sarcastic remarks—however one may sympathize with teachers who are faced with numbers and conditions that make their task well-nigh impossible. And what becomes of the attempt to awaken a response to the beauty of poetry, music or nature, if a child is then hustled off and put under pressure to eat food that (however unreasonably) he finds distasteful, or faced with the alternatives of visiting a lavatory which nauseates him or retaining the contents of his bowel or bladder for several hours?

The fastidiousness of children; their personal modesty, even at nursery school age, as shown in the desire for privacy in the toilet; and their sensitiveness to the opinions of others about their appearance, behaviour and work—any of these can become excessive, but in normal degree they are social assets which are too often ignored and trampled over because of adults' misconceptions.

4. Remedies

The first need is undeniably for the provision of the necessary basic conditions for sound education: classes small enough to allow of attention to individual needs, adequate space and equipment, classrooms designed for sound absorption, improved dining facilities and pleasant indoor lavatories with simple bolts.

Equally important in the junior school is a reduction of the pressure that at present impinges in most areas from secondary selection procedures.

But even the best conditions would make little or no difference to a number of the most unsatisfactory situations reported here. For these arise from certain fundamental concepts of education, which determine teachers' approaches to their work.

Competition is taken for granted in the great majority of British schools as an indispensable motive for learning. It is fostered by the use of marks, grades or credit points, and sometimes by numbered positions in the class for specific subjects. All this does less than justice to children's natural thirst for knowledge; exalts the desire to beat one's neighbour at a time when the world's need is surely for practice in co-operation; and adds gratuitously to the problems of those children whose sense of personal worth is insecure. Four groups clearly suffer: those at the bottom, saddled with the dead weight of repeated failure; those at the top, tempted to intellectual snobbery; those pressed too hard, whether by teachers, parents or their own anxiety, whose distress we have glimpsed in a few of our examples; and those who care too little—sometimes as a defence against caring too much—who are the despair of every teacher.

Gardner (1942, 1950, 1965) has demonstrated that activity methods, which stress co-operation rather than competition and render marks largely irrelevant, produce results in many ways superior to the traditional teacher-directed approach. But even with a direct approach, which suits some teachers and probably some types

of material better, competitive marking might well be replaced by one or another form of self-pacing. There is scope here for experiment by individual teachers. Grimes and Allinson (1961) have shown how different children respond best to teaching situations of varying degrees of structure, depending on their tendencies to anxiety and to compulsiveness. While it is not yet possible to arrange children in separate classes according to these traits, it may be possible for a teacher, given this knowledge plus sufficient flexibility of classroom organisation, to vary his methods deliberately to suit different groups of children at different times.

Finally, what distinguishes a good teacher? Taylor's (1962) eleven-year-olds selected as his most important qualities: ability to help, explain and encourage, knowledge of his subject, firmness in keeping order, fairness, good manners, patience and kindly understanding. This boils down essentially to teaching ability plus a combination of firmness and respect for the child as an individual. Our own studies amply confirm how these qualities, or their lack, can make or mar a child's happiness and progress. How far can we hope to find them in the many thousand teachers that must be trained in this country during the next few years? To what extent can they be developed by training? At present teacher training is often felt to offer a counsel of perfection with inadequate guidance in adapting it to reality. The difficulties encountered by young teachers in coming to terms with problems of authority are discussed by Herbert (1955). Popper (1952) illustrates the pitfalls of excessive unconscious identification with a difficult child. A conference at Keele (Halmos, 1958) discussed the impact of courses in personality development on student teachers, and the implications for those who train them. The inevitable difficulties of the early years of teaching might be reduced by group discussion, perhaps organized by the schools psychologist. Psycho-drama might occasionally prove useful. Head teachers, as a separate group, might also appreciate an occasional opportunity to discuss ways of supporting their junior staff through the first awkward years. For in a time of increasing mechanization there is a greater need than ever to foster the variety that can only come through the development of individual contributions from teachers and pupils alike.

V. SUMMARY

This paper deals with the incidence and nature of difficulties encountered by ordinary children in adjusting to primary school life, as perceived and reported by their mothers, who were interviewed annually in the course of a longitudinal study of child development.

About 80 per cent of children were found to experience difficulties in the infant school, of which nearly one half were of moderate or marked severity. The number of difficulties decreased slightly in the junior school, but a substantial number of children still showed more than mild disturbances. Rather fewer difficulties were reported of girls than of boys at the later ages. From 6 to 8 years significantly fewer problems occurred in children of the manual working class and in those with both older and younger siblings. Boys who were only children tended to have the most problems of adjustment to school.

The commonest and most persistent type of difficulty was a general reluctance to go to school, sometimes attributable to overdependence. Of the problems concerned

with specific aspects of school life, difficulties with teachers and with work were relatively frequent, as were dislike of school dinners and objections to the toilets. Difficulties with other children and those relating to physical education were less often reported. All these problems are illustrated and examined, and the general question of adjustment to school is discussed.

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CHILDHOOD BEHAVIOUR DISORDERS AND THE CHILD-GUIDANCE CLINIC: AN EPIDEMIOLOGICAL STUDY

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INTRODUCTION

The Buckinghamshire Child Survey

THE disturbances of behaviour exhibited by children who are referred to child-guidance clinics raise two fundamental questions. The first turns on the distribution in the general population of behavioural characteristics which child psychiatrists have traditionally taken to signify morbidity. Here Kanner (1957) has commented with justice on the tendency by clinicians to disregard the selective nature of their case-material: "This selectiveness, in the absence of 'normal controls', has often resulted in a tendency to attribute to single behaviour items an exaggerated 'seriousness' with regard to their intrinsic psychopathologic significance . . . in clinical statistics, those same symptoms, figuring among the traits found in the histories of 'problem children', are apt to be given too prominent a place, far out of proportion to their role as everyday problems or near-problems of the everyday child."

The second question arises from the fact that most clinical observation of children's behaviour is initiated by intermediate lay observers who bring the child to medical attention. For this reason much of our knowledge of behaviour disorders in childhood depends on the reports of adults, especially parents and teachers. Again, Kanner (1960) elucidates the situation: "... There is no absolute criterion for the normalcy of any of the common forms of behaviour problems of children. Their evaluation is bound up tightly with the general outlook of the evaluating agent. . . . A mother who is preoccupied with calories, vitamins and the weight chart will have a different notion about her child's food intake from one who is wholesomely casual about the whole matter of eating. . . . In fact, the very term 'feeding problem' implies that a child's ingestion of food is at least as much an issue of the feeder as of the eater."

In the light of these considerations it is surprising to find how few studies have been concerned with the patterns of juvenile behaviour in the general population and the part played by key adults in the interpretation of that behaviour (Macfarlane *et al.*, 1954; Ministry of Education, 1955; Glidewell *et al.*, 1963; Lapouse *et al.*, 1964).

Such work clearly demands a broad epidemiological framework. This has been provided by the present authors in a large-scale survey carried out in the county of Buckinghamshire§ where, in 1961, questionnaires were sent out to the parents and teachers of a one in ten sample of children attending local authority schools in the county. The sample children were identified from every tenth card in the records

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of the school medical services for the county. The relevant class teacher was then asked to complete a questionnaire about each survey child and also to act as an agent for transmitting and returning the questionnaires to the children's parents. Of 6920 forms sent out to parents 6287 (91%) were received back completed. Teachers filled in questionnaires for 6632 (96%) of the children.

The questionnaire which went out to parents was based on that used by Cattell and Coan (1957), modified to record behaviour problems rather than personality variables as in the original version (Appendix 1). From the material collected in this way quantitative information was obtained about the reported behaviour of a large, representative sample of children between the ages of 5 and 15. It was also possible to compare the socio-medical differences between sub-groups defined in behavioural terms (Mitchell, 1965). In addition, however, the data suggested the need to investigate another problem, for many of these supposedly normal children displayed not only individual items of behaviour which in intensity or frequency lay towards the apparently pathological extreme of each behavioural continuum; a proportion of them were also reported to exhibit combinations of 'problems' which appeared to be virtually identical with those encountered commonly among patients at child-guidance clinics. Accordingly, it was clearly of practical as well as of theoretical interest to compare such children with those who are referred to medical care for ostensibly similar complaints. This study was designed to make such a comparison.

METHOD

The core of the investigation consisted in a comparison between a group of 50 children attending child-guidance clinics for the first time in 1962, and a group of matched children from the main sample who had never attended such a clinic. The clinic group was obtained so far as possible by taking each consecutive new case attending for diagnostic interview. Since one of the purposes of the study was to investigate voluntary attendance at child guidance clinics by children and their parents, it was decided to exclude from the survey all children who were attending a clinic for a court report or as a condition of probation (5 cases), and those who were in residential schools or children's homes (6 cases); 3 families in which another child was already attending the clinic were also excluded. Further, since the intention was to match the children attending clinics with those with similar behaviour from the main school sample, children were also excluded if they were younger than 5 years of age (12 cases) or older than 15 years (4 cases); if they were suffering from psychosis, epilepsy, or brain damage (4 cases) or if their problems were of a type not covered by the questionnaire used in the main survey, e.g. sexual delinquency, attempted suicide (15 cases). To these exceptions were added two refusals, one removal and three children seen by clinic staff at domiciliary visits. The excluded categories involved most of the more 'severe' cases seen at the clinics. In all they amounted to 27% of the children aged 5-15 years attending clinics. It therefore appears that the group of 50 children included in the study may be taken as reasonably representative of three out of four children of school age attending child-guidance clinics.

The parent of each clinic child was interviewed by the research worker either at

the first visit to the clinic or as soon as possible thereafter. At this semi-structured interview the parent described the 'problems' that had led to the child's referral, the attitudes and reactions of family members and other persons to the child's behaviour, any action taken to deal with it, the route to the child-guidance clinic, and parental feelings about referral. Information was also obtained about the parents' social, educational and occupational background, and their physical and mental health. In addition, each parent was asked to complete one of the questionnaires used in the main sample survey and a report was obtained from the child's school.

From the questionnaire completed by the parent of the clinic child a Hollerith card was punched to show the child's age, sex and behaviour. A special note was also made on each card of the presenting symptoms at the clinic. The cards of all children in the main sample of the same age and sex as the clinic children were sorted, and those which recorded behaviour similar to the presenting problems of the clinic children were extracted. The sample cards were then compared by eye with those for the clinic attender, and the child who showed the most similar behavioural profile was selected to make a matched pair for the corresponding clinic child. To avoid having to repeat this procedure if the matched child were, for some reason, unobtainable other suitable children were also listed at the same time.

The mothers of the matched children were then interviewed by the research worker in their own homes and invited to give an account of the behaviour specified on the questionnaire. The following pairs of case-histories illustrate the nature of the information and the quality of matching:

1 (a) *Clinic child*

M.X., a girl aged 12 yr, was referred to a child guidance clinic because of difficult behaviour at home. She had violent tantrums every two or three days in which she stamped, cried, shouted that no one loved her and rushed up to her bedroom where she stood in front of the mirror with tears pouring down her face. If asked to help her mother she would either "gaze in front of her and pretend she doesn't hear" or do it very slowly "one fork at a time" while complaining about how ill-used she was. She had several times said that she was leaving home but had never been farther than the bottom of the road. She told numerous lies. For instance, she had told her mother that school did not start until 9.10 a.m. when, in fact, she should have been there at 9 o'clock; she then told her teacher that she was late because her mother would not make her breakfast in time. For about twelve months she had been enuretic during the day at home but not at school. She would then change and leave the wet pants all round the house. The enuresis had, however, stopped about one month before the interview after a visit to the family doctor.

The only person with whom she had a good personal relationship was said to be her maternal grandmother, with whom the family had lived for the first three years of her life. With her own parents she made little response to affection or attempts to reason with her. She was very jealous of her younger brother and would provoke him. She did not mix much with the other children in the area and was becoming so rude and unpleasant to adult visitors that her parents had become reluctant to invite visitors to the home.

(b) *Matched child*

S.T., a girl aged 13 yr, had been a difficult child since an admission to hospital with scarlet fever when she was 2½ yr old. As a baby had cried so much that the mother stated: "When I got pregnant again I said I hope I don't have another grizzly little bitch like that one". She had always been quick-tempered and would lie on the floor and scream if crossed in any way. When chastised she became distraught. These outbursts occurred almost daily. She was underweight (70 lb. on her thirteenth birthday) with a very small appetite and, when upset, she refused all food. The mother complained that she would not do anything to help in the house and that she would not obey either

of her parents. She got on better with her father and with the older brothers but "hated" her mother and her younger sister. She had no sympathy with her mother's disability arising from an arthritic shoulder which she regarded as "just laziness". She had one friend at school but otherwise no social contacts. Her only interest was the school drama club; otherwise she just stayed at home watching television most of the time.

2 (a) *Clinic child*

M.P., a boy aged 10 yr, was referred to a child-guidance clinic because of refusal to leave his home for the past three months. Previously he had been an energetic boy, good at sport, popular with his school-mates and sufficiently independent to undertake an unescorted coach journey to visit his grandparents. He had begun to complain of feeling "weak and dizzy", stating that his "stomach turned over" if he took food or drink and that his "head wanted to burst out of his skin". He had become very faddy about food. On some days he would eat nothing, though on others he was still capable of taking a good meal. The only liquid he would take was about half a pint of lemon squash daily. He said that he felt too "dizzy" to go to school and, if delivered there forcibly by his father in the car, would cry violently, threaten to jump out of the moving car and, on arrival, either run away or stand sobbing in the cloakroom. He had become very tearful and irritable; he cried and threw things if he were crossed in any way. He took no interest in his friends but would spend his time in the house using his Meccano set or making model aeroplanes.

(b) *Matched child*

B.G., a boy aged 10 yr, had suffered from a stream of minor ailments for the previous two years. He had constant sore throats and colds; he had headaches several times a week; and he developed "water blisters" of unknown causation. He had become very anxious about his health. He washed his hands frequently because of "germs"; he gargled; he brushed his teeth frequently; and he made his mother examine his ears and throat every day. He was afraid of dogs; he was afraid to go upstairs by himself, particularly in the dark. He was faddy about food and would not eat fish, eggs or milk. He worried a lot, had bad dreams and occasionally walked in his sleep. He disliked school intensely and would go off in the morning looking very tearful and sometimes "downright ill", so that neighbours had asked if he ought not to be kept at home. Sometimes he vomited in the morning and often refused to eat his breakfast, but unless he had a temperature he was sent to school where he ceased to complain. It was the process of leaving home that he could not bear. He was regarded as backward at school and had been unable to read when he entered Junior School at the age of eight though he had since made progress. He had friends at school but once he had returned home he was unwilling to go out again to play with them. His brothers teased him a lot and he reacted with tears and tantrums; his relationship with his father was poor.

In 1964 the parents of both the clinic and the non-clinic children were again approached and re-interviewed by the research worker whenever possible. Psychiatrists treating the clinic children were given advance notice that the parents were to be approached. In two instances the doctor asked that the interview should be omitted on the grounds that such enquiries would interfere with the relationship between psychotherapist and child. In all other cases there were no obstacles imposed by the medical authorities. Four sets of clinic-parents refused to be re-interviewed and only an incomplete interview was possible with another three. Among the non-clinic children, seven sets of parents could not be contacted. The remaining 87 parents were seen in their own homes and asked about any changes in behaviour which had taken place since the last interview. The original problems were discussed in detail and, in most cases, a standard (follow-up) parents' questionnaire was also completed at the interview.* This procedure made it possible to detect and investigate any new problems which had appeared during the interim period.

*The behavioural items on this questionnaire were identical with those of the original (appendix I); only subsequent changes in social and personal circumstances were recorded.

RESULTS

The results of this investigation fall logically into two categories: (A) the initial differences between the child-guidance cases and their 'matched' controls; and (B) the outcome of both groups.

A. Comparisons between children referred to child-guidance clinics and matched children

1. *Factors associated with the process of referral*

(a) *Severity of disturbances.* It was manifestly imperative at the outset to eliminate the possibility that referral to a child-guidance clinic depended only on the degree of behavioural disturbance. To obtain a clinical assessment of severity, ratings of behaviour were made for each child by five raters, four psychiatrists and one clinical psychologist, all of whom assessed the records of each child independently. Each rater was given a typewritten profile from which details bearing on contacts with child-guidance clinics and related agencies were omitted; the 100 case-histories were presented in random order so that no indication of matching was given. A five-point rating-scale was employed, ranging from 'very severe' to 'very mild'. As we were chiefly concerned with intra-rater comparisons each rater was permitted to employ an individual frame of reference in defining these categories. A 'disturbance rating' was obtained by scoring, adding and averaging the original ratings.

TABLE 1. AVERAGE "DISTURBANCE RATING" SCORE OF 50 CLINIC CHILDREN AND 50 MATCHED CHILDREN

Average rating score	No. of children	
	Clinic children	Matched children
1	1	1
2 } (mild)	12	23
3 } (moderate)	29	22
4 (severe)	8	4
Total	50	50

$$\chi^2 = 5.5; 2 \text{ df.}; P < 0.10 > 0.05$$

Table 1 shows there to have been a non-significant trend towards more severe ratings for the clinic-children; the ratings for matched pairs were identical in 27 instances and for a further 11 pairs the difference in average rating score was less than one point. In three quarters of the pairs there was the same rating for both children of a matched pair by at least one rater. The degree of disturbance could not, therefore, be taken as the sole determinant of referral.

(b) *Other factors.* A close examination was made of (i) *geographical distance from the clinic*, (ii) *the presence of young children in the household*, (iii) *gainful employment of the mother*, and (iv) *parental reactions to the children's behaviour*. Of these factors only parental reactions distinguished between the two groups.

Parental reactions to children's behaviour. These reactions were assessed by the research worker at the interview. The assessment was based partly on the parent's own description of her feelings and those of her husband, in response to direct questioning, and partly on the terms in which the child and his problems were described spontaneously, and the actions already taken to deal with them. Table 2 shows that the most obvious difference lay in the number of non-clinic mothers who accepted their children's behaviour as a temporary difficulty and saw no reason to seek medical advice for it. This general trend towards increased tolerance was particularly

TABLE 2. MOTHER'S REACTION TO CHILD BEHAVIOUR

Mother's reaction	Number of boys		Number of girls	
	Clinic Children (N = 29)	Matched children (N = 29)	Clinic children (N = 21)	Matched children (N = 21)
Problems not seen to exist	2*	2	1*	2
Problem seen to exist but regarded as inevitable because due to developmental phase or environmental pressure†	—	5	—	10
Primarily worry about the child's future welfare or present unhappiness‡	10	5	10	3
Primarily bewilderment, inability to cope†	5	2	7	1
Exasperation and irritation	13	14	10	4
Fear of delinquency or Court proceedings for absence from school	3	1	2	1
Problem regarded as educational only	—	1	—	—
Problems regarded as purely physical	—	3	—	4

N.B. It is possible for one child to appear in more than one category: the column total is not therefore the same as the number of children in the group.

*Attended clinics under pressure from the child's school.

†For both sexes combined, χ^2 -test (with Yates' correction): $P < 0.05$.

‡For both sexes combined, χ^2 -test (with Yates' correction): $P < 0.001$.

obvious among the mothers of the matched girls; by contrast, only one clinic mother expressed herself in this way and her child had arrived at the clinic after admission to hospital as the result of an accident.

Clinic-attending mothers worried significantly more about their children and were correspondingly more puzzled and helpless about coping with them. Compared with non-clinic parents they discussed their children's problems significantly more with the school authorities (62% : 26%) and, probably as a result, with the school doctor (26% : 4%) though there was little difference in the proportions consulting their family doctor (70% : 60%). Mothers of girls who came to clinics expressed themselves as being more irritated and exasperated by their children's behaviour than

did their matched counterparts; this difference was not so apparent among the boys' parents.

2. Background factors

(a) *Occupational class of father.* The occupational class of father was measured by the Hall-Jones scale (Hall and Jones, 1950). There proved to be a significant difference between the two groups, the proportion of fathers in non-manual jobs being twice as great among the clinic children (40%) as among the others (20%) (χ^2 test: $P < 0.05$). This difference was particularly marked in the upper strata of each occupational group, but it may, to some extent, reflect the methods by which the control group was selected: all matched children were taken from the main sample of children attending local authority schools and the exclusion of private school pupils must have eliminated a number of children in the upper social classes.

(b) *Age of parents.* This factor proved to be very similar in both groups, whether recorded as the parental age at the child's birth or age at the time of survey.

(c) *Family disruption, death or separation experiences.* Among the clinic children, ten had lost at least one parent permanently, compared with three in the non-clinic group. The loss of a father, by desertion or divorce, was significantly more marked among the clinic boys (6 cases) than among the others (no cases) (Fisher's exact (2-tailed) test, $P = 0.0186$). There was also a tendency for the clinic children to have suffered the loss of an older sib more often than the non-clinic group (7 cases to 3) but this difference is not statistically significant.

(d) *Mental health of parents.* More clinic attending mothers (34) saw themselves as 'suffering from nerves' than those in the non-clinic group (27 cases). In particular the clinic mothers were more apt to describe themselves as anxious and easily upset by stress which caused them to faint, vomit, and develop diarrhoea or pains; as feeling mildly depressed, tired and unappreciated, and as finding it difficult to cope with their house, husband and children. Fourteen clinic attending mothers fell into this category compared with 6 non-clinic mothers. Though the difference is not significant these findings support Winnicott's (1965) thesis that there is a tendency for some mothers to bring their children to clinics in an attempt to obtain relief for their own mild depression.

Furthermore, there appeared to be some evidence to suggest a possible relationship between the presence in a parent of a degree of mental illness sufficient to require treatment either by a psychiatrist or by the family doctor, or which had been severe enough to limit the person's activities (fear of leaving the house, fear of crowds in shops, for instance), and the severity of the child's disturbance. Thus of the 31 children, one of whose parents suffered from such a disability, 7 (23%) were assessed as severely disturbed and 9 (29%) as mildly so compared with 5 (7%) and 28 (41%) respectively of the 68 other children who were resident with parents or step-parents.*

B. Comparison of outcome of the two groups

Status at follow-up interview. The information provided by the parents about the

*The numbers involved are too small to use a χ^2 -test to assess the significance of this association. Using Fisher's exact (2 tailed) measurement of probability, however, is $P=0.054$. This just fails to attain significance.

child's state in 1964 was written-up as before, and the degree of improvement or deterioration shown by the children's status at follow-up was assessed by three of the observers who had made the original ratings. In each case the assessor was provided with both the old and the new profiles and the original rating. Again, all references to any treatment received by the child were omitted and the raters had no means of knowing which children had attended psychiatric clinics. The assessment was rated on a five-point scale.

According to these ratings 55 children (63%) had improved over the interim period; 21 children (24%) had remained in the same state as before, though not necessarily with the same behavioural disturbance; and only 11 children (13%) had deteriorated. Most strikingly, Table 3 shows that there was no significant difference between the two groups in respect of improvement or deterioration.

TABLE 3. STATE AT FOLLOW-UP OF 50 CHILDREN WHO HAD ATTENDED CHILD-GUIDANCE CLINICS AND 50 MATCHED CHILDREN

Average improvement/ deterioration rating at follow-up	Clinic-attending children		Matched children	
	No.	%	No.	%
Improved	29	65	26*	61
Unchanged	8	18	13*	30
Worse	7	16	4	9
Total Number of Children	44	100	43	100

$\chi^2 = 2.81$; 2 *df.*; not significant

* = Including one child in each category who had been referred to a child-guidance clinic during the follow-up interval and had received treatment.

An analysis was then made of the amount of treatment received. A comparison of the mean number of visits paid to a psychiatrist, with the change in rated status, revealed there to have been virtually no difference in the average number of clinic attendances between those who improved and those who deteriorated. The children whose state was assessed as unchanged were those with the largest average number of attendances, averaging 15 psychiatric sessions each compared with approximately nine sessions for the other two groups. Further, in the group of children who did improve, were 83% of those who attended clinics for from one to five sessions, 33% of those with 6-15 sessions and 63% of those who had received more intensive treatment or who had received special schooling.

It can, of course, be argued that the children showing most improvement on minimal treatment were those who were least disturbed initially, and those failing to improve after more lengthy treatment were those who were most disturbed originally. This did not prove to be the case (Table 4). Of the 9 clinic children who were originally rated as 'severely disturbed' 8 were improved at follow-up but only 2 had received more than 5 sessions with a psychiatrist, and none had received special education. Again, among the 5 originally 'mild' cases who had failed to improve 4 had received more than 5 sessions of psychiatric help.

TABLE 4. OUTCOME OF CHILDREN BY INITIAL RATING OF DISTURBANCE AND FREQUENCY OF ATTENDANCE AT A CHILD-GUIDANCE CLINIC OR CLINIC-INITIATED CLASS OR SCHOOL

Original level of disturbance	No. of attendances made at clinic or class	Outcome			
		Improved No.	Improved %	Not improved No.	Not improved %
'Mild'	None (controls)	14	67	7	33
	5 or fewer	3	75	1	25
	6 or more*	4	50	4	50
'Moderate'	None (controls)	9	53	8	47
	5 or fewer	6	75	2	25
	6 or more*	9	53	8	47
'Severe'	None (controls)	2	67	1	33
	5 or fewer	6	100	—	—
	6 or more*	2	67	1	33

For all grades of severity combined overall χ^2 shows no significant association between number of attendances and outcome ($\chi^2 = 5.25$; $df. = 2$; $0.10 > P > 0.05$).

*This category includes all those attending classes and schools.

DISCUSSION

A psychiatrically sophisticated general practitioner has commented of his own practice that "... for each child referred to child-guidance clinics there are five, equally disturbed, not referred" (Ryle, 1963). The findings of this study demonstrate that a supposedly normal population can include children with behaviour disturbances comparable to those of patients at a child-guidance clinic. For these children referral to a child-guidance clinic is related chiefly to parental reactions. The mothers of clinic-children were more apt to be anxious, depressed and easily upset by stress; they were less able to cope with their children, more apt to discuss their problems and to seek advice. Even though our clinic population was deliberately selected to exclude the most severe cases the case material was otherwise unselected and represented the majority of children seen by child psychiatrists in the county.

The most obvious inference to be drawn from these data is the existence of a large pool of morbidity in the community which, it might be maintained, should be countered by expanded public health measures, in particular by an increase in the number of child guidance clinics. Caution, however, is enjoined by the results at follow-up: while 63% of the clinic cases had improved after 2 years, so had 61% of matched children who had not attended the clinics, and whose parents had at interview confirmed the existence of disturbed behaviour.

On the basis of this study, then, we would suggest that many so-called disturbances of behaviour are no more than temporary exaggerations of widely distributed reaction-patterns. The transient nature of these reactions is demonstrated by the tendency to spontaneous improvement in the untreated children and also by a follow-up study of a larger group of 400 children (Mitchell, 1965). Clearly childhood behaviour cannot be deemed morbid without some knowledge about its frequency, intensity, duration, and association with other forms of behaviour, and the setting in which it occurs. The limits of deviance have to be closely defined in this field.

The implications of this viewpoint for medical services are equally important.

They have been adumbrated by Buckle and Lebovici (1960) as follows: "all children show signs of disturbed behaviour at some time or another, and professional intervention is justified only if the disorder persists long enough to authorize a prognosis of lifelong disorder, or when the disturbance is serious . . .". At the present time, the prognosis of most behaviour disorders is difficult to make because of the small number of longitudinal studies. If, however, it can be shown that certain types of children are more likely to improve spontaneously and that certain problems are likely to disappear with increasing age, then such children and their parents could be provided with support or advice. The greater portion of limited resources could be devoted to those children with behaviour patterns or family circumstances which indicate that spontaneous remission is unlikely to occur.

SUMMARY

This study reports on a comparison between a group of 50 children attending child-guidance clinics and a group of children matched by age, sex and behaviour. The matched group was taken from a representative one-in-ten sample of supposedly healthy children attending local authority schools in the county of Buckinghamshire. The results indicate (i) that referral to a child-guidance clinic is related as much to parental reactions as to morbidity, and (ii) that approximately two-thirds of both groups had improved over a two-year period. The implications of these findings are discussed.

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APPENDIX 1

QUESTIONNAIRE ADMINISTERED TO PARENTS

CHILD HEALTH SURVEY

A

Below are some descriptions of illnesses and health problems which can affect children. If any item is true of.....will you please put a line under **Yes**. If the item does not apply to this child then please put the line under **No**.

This child			Has a doctor ever said that this child suffered from		
1. Wears glasses' always	Yes	No	19. Any disease or disorder of the bones (<i>Not</i> a broken bone) ..	Yes	No
2. Wears glasses sometimes	Yes	No	20. Any disease or disorder affecting muscles	Yes	No
3. Is having treatment for eyes at clinic or hospital	Yes	No	21. Heart trouble	Yes	No
4. Has had persistent ear-ache or running ear during the last twelve months	Yes	No	22. Eczema	Yes	No
5. Seems to have difficulty in hearing sometimes	Yes	No	23. Asthma	Yes	No
6. Has a hearing aid.....	Yes	No	24. Tuberculosis	Yes	No
7. Suffers from sick headaches	Yes	No	25. Any chronic lung trouble (such as chronic Bronchitis) ..	Yes	No
8. Gets travel-sick in car, bus or train	Yes	No	26. St. Vitus Dance	Yes	No
9. Has frequent colds or sore throats	Yes	No	27. Meningitis (Brain Fever).....	Yes	No
10. Has a persistent and troublesome cough	Yes	No	28. Migraine	Yes	No
11. Is overweight	Yes	No	29. Cerebral Palsy ("Spastic") ...	Yes	No
12. Is underweight	Yes	No	30. Fits or Convulsions	Yes	No
13. Has fainted more than twice in life	Yes	No	31. Diabetes	Yes	No
14. Is highly strung	Yes	No	32. Rheumatic Fever	Yes	No
15. Has suffered from a rash or other skin trouble which lasted for two weeks or longer	Yes	No	33. Hare-lip or Cleft palate	Yes	No
16. Has to wear special support for bone or muscle disorder (for instance, iron on leg, built-up shoe, etc.)	Yes	No	34. Any disorder of the glands (<i>Not</i> just swollen neck glands) ..	Yes	No
17. Has to wear brace on teeth...	Yes	No	35. Any other physical handicap or chronic illness. If so, what is it? Please write it below ...	Yes	No
18. Has a stammer	Yes	No		
				

For Girls only:

36. Have periods started yet?.....Yes No
37. At what age was first period (write in number)
38. If periods have started, does she
- Worry about it.
 - Feel sick.
 - Complain of pains.
 - Have to stay away from school or go to bed.
 - Usually have no trouble or worry at all.

Please underline any of these items which you think apply to this girl.

For Boys only:

39. Has his voice broken yet?.....Yes No
40. If so, at what age did this happen?.....

B

Below are some statements which describe the way that children behave. In each group of three, please underline the description that best suits at the present time.

45. Seldom or never purposely destroys things.
About as destructive as most children of the same age.
Very destructive.
46. Very much afraid of one or more animals (that is ordinary British animals, not lions, tigers etc.).
A little afraid of some animals.
Not at all afraid of animals.
47. Has no fear of meeting new people.
A little afraid or shy of new people.
Generally fearful of unfamiliar people.
48. Afraid of the dark when in bed at night.
Seems a little uneasy unless a dim light is left on.
Has no fear of the dark.
49. Always tells the truth.
Tells an occasional fib.
Tells deliberate untruths quite often.
50. Likes school very much.
Likes school about as much as most children.
Dislikes going to school.
51. Never takes anything that belongs to someone else.
Has helped himself to someone else's things at least once or twice (including taking things belonging to other members of the family).
Has stolen things on several occasions.
52. Very irritable, easily becomes cross or annoyed.
Occasionally becomes cross (for instance, if tired or provoked by other children).
Very placid nature, practically never gets cross or annoyed.
53. Rather fussy about food, will eat certain things.
Has fairly definite food preferences but will eat most foods if hungry.
Will eat nearly anything.
54. Not at all shy, mixes freely with other children.
A little shy with strange children.
Very shy, bashful, fearful of other children.
55. Always hungry, eats a great deal both at meals and as snacks between meals. Can't stop him eating.
Eats about as much as others of the same age.
Small appetite, inclined to pick at food.
56. Very carefree, doesn't worry about anything.
Occasionally worries (for instance, about tests at school or illness in the family).
Often seems worried, worries about many things.

57. Complains and whines a lot, hard to satisfy.
Complains about as much as most children of the same age.
Seldom or never complains or whines.
58. Very restless and fidgety, cannot sit still for a minute.
About as active as most children of the same age.
Less active than average, likes sitting still as much as possible.
59. Tends to be very jealous.
Occasionally shows jealousy.
Seldom or never jealous.
60. Never wanders off from home without saying where going.
Loiters on way home from school or may go to play with friends without telling parents.
Wanders off for long distances or long periods without parents knowing where.
61. Almost daily has times of being drawn into self and out of touch with other people.
Occasionally seems lost in a dream world.
Seldom or never day dreams.
62. Always does things when told.
About as obedient as most children.
Usually resists when asked or told to do things.
63. Plays truant from school more than once or twice a month.
Plays truant more than three to four times a year.
Never plays truant.
64. Has a very noticeable twitch of face or body, or mannerism, which takes place most of the time.
Has occasional twitches or mannerisms which occur when tired, bored, etc.
Has no twitches or mannerisms.
65. Moods very changeable, on top of the world one minute, down the next for no particular reason.
Occasional changes of mood in response to things that happen.
Runs on very even keel, always the same except under very unusual circumstances.
66. Seemed to have difficulty in learning to read.
Learned to read as quickly as most children.
Good reader, learned to read more quickly than other children.
67. Is there anything about your child's behaviour or habits which worries you but which we have
not mentioned? If so, please tell us about it here

A SIGNIFICANT ELEMENT IN THE DEVELOPMENT OF AUTISM: A PSYCHO-ANALYTIC APPROACH

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INTRODUCTION

THIS paper concerns the 'primal depression' manifested by psychotic children, which other workers have found to be 'the turning point in the arrest of emotional development' (Rank and Putnam, 1953). Mahler (1961) writes of such children's 'grief'. My own work, within the framework of Klein's (1961) technique of Child Analysis, has confirmed the crucial importance of this primitive type of depression, as well as some of the features of a specific situation in early infancy which seems to provoke grief. Case material will be brought to demonstrate these points which will be discussed in relation to the syndrome of early infantile autism. (Kanner, 1943; Creak, 1961.)

CASE MATERIAL

John's parents became worried by his lack of speech and the fact that he seemed different and, in most respects, slower in development than other children of his age. When aged 2 : 6, he was seen by a psychiatrist who feared mental defect. However, on being seen again six months later, John was found to have made a small hopeful development in that he now put toy motor-cars the right way up. (Previously, he had kept them upside-down all the time in order to spin their wheels.) On the basis of this, John was referred to another psychiatrist for a second opinion, with autism as a possible alternative diagnosis. The second psychiatrist referred John (then aged 3 : 7) to the writer for intensive psychotherapy with the following report:

"There has been a failure almost from birth to take his milestones in his stride, as if there were a reluctance and a drag back at each stage. He now shows so many of the attitudes we associate with autism. His chief interest seems to be to tap different surfaces, or to spin round objects. He is fascinated by mechanical moving parts, and has always been quite clever at learning to move his body. Although he is sure-footed he still does not feed himself; not that he cannot—it seems as if he will not. This is what I mean by jibbing at milestones. He shows excessive anxiety at times, with days of screaming, but this aspect is much less evident. He has no useful speech, and only communicates very tentatively by trying to use your hand. Nevertheless, I felt sure he was capable of making a primitive contact at this sort of level, and that therefore there was something on which one could build an attempt at therapy. My deepest anxiety is as to whether the basic determinant of all this may be an inherent degree of mental retardation."

'A bad family history on the paternal side' was reported. Father's only sister was a hospitalized schizophrenic and there were other eccentric and psychotic

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relatives. It was also reported that there had been 'tremendous strain' between the child's mother and an aunt who had been mainly responsible for the care of the father during infancy and childhood. John was a first baby. On the physical side, pregnancy and birth were normal, but the mother, who came from a remote village in Scotland, had been upset by what she felt to be the foreign procedures of an English maternity hospital. She also felt that the nurses prevented her and the baby from getting together in a good feeding relationship. She had a great deal of milk and was very disappointed when breast-feeding could not be established. The baby seems to have been a poor sucker and the mother reported that for one week after birth he did not open his eyes. When mother and baby left hospital they went to live with the paternal aunt. Again, the mother felt she was prevented from getting together with her baby, this time by the interference of the aunt. The father was working in another town for the first few months of the baby's life and the mother was insecure and unhappy during this time, but her depression was not such that she had to have treatment.

When I saw the parents, they reported that John had had no traumatic experiences such as separations or serious illnesses. He had shown little reaction to the birth of his sister when aged 1 : 6 and had always been a quiet baby. They could give no details about the time at which he first held up his head or sat up, but in the locomotor sphere his development seems to have been quite normal. They began to worry when he failed to learn to talk, and by the strange nature of his play. Bizarre hand movements were reported; he moved his fingers in front of his face in a queer stiff way. He could not be persuaded to put pencil or crayon to paper. Soft foods would be eaten but he rejected hard lumps. He seemed to confuse his mother's mouth with his own. Bowel and bladder control had not been achieved. I had the impression that the mother had had especial difficulty with this aspect of child care. Remembering her own childhood, in which she had experienced the deprivation of living mostly away from home in an institution on the death of her father, she spoke of her impatience at being a child and her longing to be grown up.

The referring psychiatrist gave irregular but important supportive help to the parents whilst John was in treatment. They needed this, for when the treatment "holding situation" (Winnicott, 1958) was ruptured on various unfortunate occasions, John had screaming attacks and sleeping difficulties which they found very difficult to bear. The parents were sensitive, intelligent people and it says much for their concern for John that they maintained support for the treatment during these times and brought him regularly. Without this, the present relatively satisfactory result could not have been achieved.

COURSE OF TREATMENT

John was aged 3 : 7 when he began treatment. At first he came once a week, later three times, and finally five times per week. On his first visit he was expressionless. He went past me as if I did not exist. The one moment when this was not so, occurred in the consulting room when he pulled my hand towards the humming top which I spun for him. At this, he became very flushed and leaned forward to watch it spin. As he did so, he rotated his penis through his trousers whilst his other hand played around his mouth in circular spinning movements. This suggested

to me that he made little differentiation between the movements of the top and those of his own body. He exuded a quality of passionate, sensuous excitement. It convinced me of the importance of maintaining the analytic setting and interpretive procedure if I were to be gradually distinguished from his primitive illusions, and do my work as a therapist who helped him to come to terms with the feelings aroused by disillusionment. From now on, I kept to a bare minimum my compliance with the actions he pressed me to do. I made simple interpretations, interspersing them with the few words the parents had told me he might understand. These were, "John, Mummy, Daddy, Nina (his sister), pee-pee, baby, potty, spin, spinning". I repeated the interpretations in several different ways and occasionally used actions to supplement my meaning (although I kept these to a minimum when I sensed that they were interpreted by him as seductive or threatening approaches).

The following are extracts from detailed notes which illustrate his response to interpretations. The first session reported is one in which he used his first word with me. It occurred after the Christmas holiday. (He began treatment in November 1951). John had no pronouns, so that this, and the limited vocabulary, make the interpretations sound cumbersome. Also, as all therapists know, the written word, however vivid, often lags painfully behind the experience of rapport in the actual session. Those who know Melanie Klein's work will realise that I am interpreting the primitive operations of projective identification with me as an illusory mother, formed from his own bodily sensations and bodily play. (Klein, 1946, 1963.)

Friday, January 10th 1952. (Session 9). (He now came three times per week. This was his last session of the week.) I quote verbatim from my notes:

"As he has done since his second session, he began by playing with the humming top. On the basis of previous material, as well as the manner of his play in this session, I interpreted that he was using his hand to spin the Tustin top so that he could feel that John was Tustin and Tustin was John. Then he could feel that we were always together.

Immediately following this, he took out the mother doll and handled the bead that joined the handbag to her hand with the same circular movement with which he had handled his penis in the incident with the humming top. After tapping the mother doll, he threw her to the ground saying very plainly 'gone'.

(I interpreted that John was spinning the mummy's bead as if it were his pee-pee to feel he could go right inside the mummy's bag, but then he felt it made her into a 'gone' mummy.)

He immediately picked up the little girl doll, turned her round and round and ground his teeth loudly.

(I interpreted that John was spinning into the mummy's bag to bite the girl baby, but then he felt he made the girl 'gone' and the mummy 'gone'.)

He took the baby doll and put it in the cot which he turned upside down so that the baby fell out.

(I interpreted spinning into the Tustin mummy's bag to upset her babies because he wanted to be her only baby.)

Following this, he worked the top inside the suitcase provided for his toys, pressing the point into some soft plasticine strips in the bottom of it. Once he touched the baby doll and said, 'baby' or 'pee-pee', I could not tell which.

(I interpreted that John felt that his spinning made a soft mummy who let him spin inside her to make her babies gone and this made her into a 'gone' mummy.)

(During such material, I found my thoughts wandering so that I was in danger of complying with some unspoken request and thus behaving as if I were a part of his body or a toy, instead of as a mature, thinking person who was trying to help him to come to terms with his feelings. Other workers have found that this is a not infrequent occurrence with such 'atmospheric'

children. Later, I found it helpful to interpret to him that he felt he spun inside my head to make my brain children 'gone' so that he could feel he could have his own way with me.)"

In the above material, we see the beginning of his disillusionment arising from the fact that I can be "gone", both in the sense of not attending to him and in the actual bodily sense of being separated from him. This means I am not under his control. Four weeks later this was developed further when he spoke two more words. Again it was on the last session of the week.

Friday, February 9th 1952. (Session 23). Mother and John had rung several times before I could manage to get to the door to open it. As they stood on the step they looked cold and frozen. He had stopped rattling the letter-box; on previous occasions I had the impression that he felt he controlled me to come to the door by doing this. He mournfully repeated "dirty" after his mother as she looked into his ear. In the consulting room he tried to spin the top on the soft carpet. It would not spin. Violently thrusting his hand into mine he tried to use it as an appendage to his own to make it do so. It did not. Spitting with rage and breathing heavily, he threw the offending top to the ceiling. It just missed the electric light. With a crash it fell to the ground and broke into two halves. The inside fell out. Shocked, he went to it and said, "Broken!" and "Oh dear!", in a grief-stricken way. He spent the rest of the session hopelessly trying to mend it. It seemed that depressing realities were penetrating the autism.

There now followed a confused period in the analysis (February–April 1952). During this, there was the attempt to mould people and things in a way which ran counter to their real nature, as in the incident with the humming top. The toys and myself seemed to be manipulated as if they were his excreta or parts of his own body. During this time he spent most of the sessions lying on the couch playing with his penis, and with his own faeces and occasional bits of plasticine, which hardly seemed to be differentiated from faeces. There was also nose-picking and spitting.

This ceased after the three-week Easter holiday (April 1952). This was his second long break in treatment. He now developed an obsessional habit of tapping a button on a cushion and saying, "Daddy!" "Daddy!" (His father was away from home during this time.) This, and the toy he called "the red daddy bus", played a large part in the analysis during this period. There were tantrums when he realised that they were not part of him and so would not always do as he wanted. Following this, he would say "Broken!" "Gone! Oh dear!" very dolefully. (May–June 1952.) His first use of the personal pronoun came after he had broken the "red daddy bus" in such a tantrum. He said, "I mend it! I mend it!" (Session 118.)

Monday, November 26th. (Session 130). One day, after changes in the routine of bringing him, he was distressed when his father nearly missed his footing on the front steps as he was waving "goodbye" to John after leaving him for his session. During this session, he seemed to be trying to maintain that the movements of his body could keep his father alive. (For example, he jumped up and down on the couch saying, "Daddy mended! Daddy mended!") At the end of the session when he found that his mother and not his father was waiting for him, he screamed, "Daddy! Daddy gone! Daddy broken!" Following the incident he had a severe nocturnal screaming fit. In it, he said such things as "I don't want it! Fell down! Button broken! Don't let it bite! Don't let it bump!"

With hindsight, I realised that these nightmare screams expressed infantile anxieties which had been active in relation to the father, the "red daddy bus" and the button on the cushion—all of which seemed to have been equated. But, as long

as the anxieties were scattered in this way, I could not sufficiently understand them to help him to come to grips with them.

A session which occurred fifteen months after treatment had begun will now be reported in detail. In this session anxieties which had been adumbrated in previous sessions were brought together and more clearly represented by means of words and toys. People were now being distinguished as people, and words were not so mixed up with material objects. Thus the autism was much diminished.

January 25th 1953. (Session 153). (Before giving this session, I should say that in December John had seen a baby feeding at the breast and had shown great interest. I had not used the word "breast", not knowing whether he knew it. It now came into his material.)

He carefully arranged four coloured pencils in the form of a cross and said, "Breast!" Touching his own mouth he said, "Button in the middle!"

(I interpreted baby John's desire to make up a breast for himself out of his own body.)

He then put out more pencils in a hasty careless fashion to make a ramshackle extension to the cross. To this he said, "Make a bigger breast! Make a bigger breast!"

(I interpreted baby John's desire to have a bigger breast than really existed.)

He angrily knocked all the pencils so that they spread in a higgledy-piggledy fashion over the table. He said, "Broken breast!"

(I interpreted his baby anger that he could not have a breast as big as he wanted.)

He said, "I fix it! I fix it! Hole gone! Button on! Hole gone! Button on!"

(I interpreted his baby desire to have a breast he could make or break as he pleased.)

He again angrily pushed the pencils all over the table and said, "Broken!" He then opened and shut a wooden box with ear-splitting bangs.

(I interpreted his baby anger that he couldn't have a breast with which he could do as he liked.)

He said "broken" again and went to the umbrella stand which is in the consulting room; he put his hand into the glove cavity which is in dark shadow. He shuddered and said "No good breast! Button gone!"

(I interpreted that he felt that his anger with the breast that would not let him do as he liked with it, made him feel he made a no-good breast with a hole instead of a button.)

He went to the case and fetched a piece of dirty grey cardboard and the crocodile. (The crocodile had been associated with hard faeces that seemed to bite his bottom.) He put them on the chest he had banged. He pointed to the sellotape round the edge of the cardboard and said "Icy! Icy!". Then he said, "No-good breast! Button broken!". He slid the crocodile around the cardboard as if it were slithering on ice. His face went cold and pinched.

(I took up his feeling that breaking the breast made an icy no-good breast which was no comfort to him when he was on his own.)

Now that the infantile transference was well established and the anxieties were 'contained' in the analysis, his behaviour outside showed great improvement. He was eager to come to analysis and made good progress in spite of family illness, changes in the routine of bringing him, and family bereavements. He began to admit his dependence and helplessness, and would say of things that were beyond his powers "I can't do it! Please help me!". This progress was maintained when his mother and younger sister went abroad and he was left with father. An unfortunate break now occurred in the 'holding situation'. (Winnicott, 1958, p. 268.)

Friday, April 5th 1953. (Session 194). I showed him, by means of a diagram, the day he would come back to analysis after the two-week Easter holiday. Family circumstances made it impossible for father to bring him back until one week later. In addition he had been left with the grandparents for one week. When he came back I was appalled. He seemed traumatized and frozen. He had stiff-legged mechanical gait. What speech he had left, was stammered. He was indeed in the grip of the "icy, no-good breast". This had provided no comfort for "poor little baby John left all alone on an island" (as he put it later).

As the bodily tensions relaxed, the night-time screaming fits became such a regular occurrence that the referring psychiatrist prescribed a sleeping draught. During the screaming fits he would hallucinate birds in various parts of the bedroom, and say some of the phrases he had used in his first screaming fit. The birds threatened to peck him and were a great source of terror.

However, he gradually began to bring the infantile anxieties back into the analysis. He again proceeded with the differentiations he had been making ever since his first word of "Gone!". He related to his father in a more real way and less in terms of a 'thing' like a button that could be broken. He accepted that space and time separated him from me. He put experiences into such categories as 'nice' and 'nasty', and people were classified as 'naughty' or 'sensible' according to whether they did what he wanted them to do. There was transient differentiation between fact and phantasy. He would sometimes say, "It's a story" or, "It's not really true". He now told me in more detail the illusory terrors that had given rise to the cryptic phrases in the screaming fits. (Neither he nor I dismissed psychic truth, we were merely trying to establish the world of common-sense.)

He began to associate the misuse of objects with their being broken. Of the humming top he said, "It's broken! Tops don't go on the carpet." At the end of sessions he sometimes hinted that he felt I left him because he had a part missing or because he was a "stinky little goat". Sometimes he would pretend to break off his "stinkers" (his word for the hard faeces that cut his anus—the crocodile of earlier material), and pretend to drop them down the front of my dress. Sometimes he got rid of his own feelings of silliness by calling his father "silly" and "naughty" and to his sister Nina, as to me, were assigned all the nasty experiences he did not want himself. Thus, he demonstrated clearly the phantasy of breaking off parts of himself and thrusting them into other people.

On *Tuesday, January 28th, 1954 (Session 360)*, the connection of this with his infantile experiences, and the effect on his inner world, was again shown by play with the coloured pencils, which he arranged to make a breast. (This was the first time he had done this since the previous occasion eight months earlier, before the unfortunate separation experience.) He pointed to the carefully arranged pencils and said, "Breast!". Then, touching his own mouth, he said, "Button in the middle!". Then he stood a pencil in the middle and said, "Rocket!". He called the whole thing a "Firework breast". This linked with the drawing of a dome-shaped object with brown and red "stinkers" coming out of it which he afterwards called "Fireworks". (This had been drawn following a tantrum when I would not let him use my hand as if it were his own.) Holding his mouth as if it hurt, he said, "Prick in my mouth!". Then, "Falls down!", "Button broken!", "Nasty black hole in my mouth!". Then, in an alarmed way, he held his penis and said, "Pee-pee still there?" as if he thought it was not.

In the session which followed, he said of the broken humming-top, "Broken top! Nasty peoples coming out to blow me up!". (*Wednesday, January 29th, 1954. Session 361.*) Material then came about his "stinkers" burning and piercing the button and making "a black hole in my mouth". I asked him about the black hole. He answered simply, "When naughty things are burned they go black". Following this, he said sadly, "My nice dreams turn into nasty dreams", and then, brightening up, "I have my nasty dreams with Tustin". One day the screaming fits, the cryptic phrases and some of the previous phantasies all came together into one session.

Thursday, February 6th, 1954 (Session 367). He was in a screaming tantrum as I opened the front door because he had fallen and bumped his head. There was no sign of damage, but he seemed panic-stricken as well as enraged. When he stopped crying I took him to the consulting room. Without taking anything from the case of toys, he went to the table to talk to me. He said, "Red button gone! It fell with a bump!". He then indicated both his shoulders with a semi-circular movement and said, "I've got a good head on my shoulders. Can't fall off. Grows on my shoulders." (He then said, "It was the naughty pavement, it hit me". (I said I thought that he was trying to tell me about his fears when he fell down just now.) Touching his own mouth, he said, "Nina's got a black hole. She had a prick in her mouth. Button broken! Nasty black hole!" (I should have interpreted here that these were his own nasty experiences of which he was ridding himself by attributing them to Nina, but I birked it.)

He took the plastic tractor which was a toy he had attacked remorselessly. He touched the plastic axle which is not in reality sharp. However, he touched it, gave a huge shudder and said,

"Nasty hard tractor it pricks". He spat as though spitting something that was repugnant. He then screwed himself up and screamed loudly. (I reproached myself for not having attempted to put his feelings into words and so possibly sparing his having to express them in violent action.) In his screaming he pushed away flying beads. I was afraid that he would fall off his chair, so deviating from my usual strict analytic procedure, I took him on my knee and interpreted through the shrieks. The interpretations concerned his feeling that the button was part of his mouth and the destructive feelings he had when he found that this was not so. He then felt he had a black hole and a nasty prick instead of a nice button. He felt he spat the nasty thing into the girl baby whom he felt took the button from him. But then he felt that she tried to spit it back at him and her nasty mouth seemed like flying birds. (We had had material where he had equated the flying birds with mouths.) Without the button he felt that they could hurt him. He was afraid that he might lose his head or his penis as he felt he had lost the button.

For two sessions after this he was afraid of certain objects in the consulting room; one was the dark glove cavity, another was a penis-like pipe near the ceiling; the other was the "dirty water bucket". But after these sessions the night-time screaming stopped. (It came back after a particularly worrying holiday and when the question of ending treatment was being discussed.) The hallucinations subsided and have not, so far as I know, troubled him since.

Closure Note. Treatment came to an end when John was aged 6 : 5. This was earlier and more suddenly than I would have liked, but the parents were urgent that he should finish, particularly as his need for psychotherapy was not now so obvious. He attended a school for normal children which reported that he was not markedly different from other children. He was making friends, enjoyed school, and was learning avidly. He had a vocabulary beyond that of most children of his age but this is not surprising since his parents were both intelligent people.

He was still a 'finicky' eater. In times of stress he was inclined to stammer and to have sleeping difficulties. These remaining symptoms made me want to continue, but, since there were signs that he was moving into latency, and since I felt that the parents very much wanted John to themselves, I agreed to the cessation of treatment with the proviso that it might be advisable to seek further help in adolescence. Since they are concerned people they may do this.

DISCUSSION

John's experience of grief. Such a young child's descriptions are probably the closest we can get to crucial experiences which occurred before he had words or thoughts. The crux of the grief-provoking situation was starkly expressed in his first words of "Gone!", "Broken!", and "Oh dear!". These ejaculations seemed to express evocations from his infancy when the loss and destruction of the "button" left a "black hole with a nasty prick". This was John's own formulation for the previously unformulated, intolerable experience from which his autistic withdrawal had served as a protection. He was now able to get sufficiently in touch with this experience to put me in touch with it also. Being pre-verbal it is difficult to discuss in words; evocative rather than theoretical language seems most appropriate.

Recalling the two sessions in which he represented the breast with coloured pencils (Sessions 153 and 360), it will be remembered that the "no-good breast" with the hole becomes the "firework breast" with "stinker" rockets planted in it by him-

self. These were associated with explosive tantrum-like discharges. In Session 360, the confusion of the breast with his own bodily parts is well illustrated. In these two sessions, as in Session 367, there was the delusion (I sometimes felt it was the hallucination) of exploding away in his saliva and his faeces the "button" that will not be moulded by him and stay in his mouth. Like the humming-top, it is hurled away in panic and rage because it will not do as it is told.

The connection of his own body image with his representation of a breast is again illustrated in Session 367. This was the one in which the "naughty" pavement got out of control and hit him. In this session, it was clear that he felt that he had lost a part of his body. In his distress he was not sure which part was "gone". Was it his head? His penis? Or was it that all-powerful "button"? Had it been exploded from his body in the outburst in which he unburdened himself? I had the impression, for which I have no shareable evidence, that he experienced his screams as solid, piercing objects; his mouth emitting them as a round black hole. (In later sessions, not presented here, he told me that he avoided looking at people's eyes "because of the black hole in the middle". As these anxieties were worked over in the analysis, he began to look at people's faces in the way a normal child will do.)

The presented material implies that feelings in his anus are drawn into the primary oral experience which seems to affect every orifice of his body. His body, fretted with tender spots, seemed to face an outside world which was pitted with black holes. Empathetic identification seemed to put me in touch with wordless elemental dramas arising from sensations in his own body; the "button" being the product of such bodily sensations.

The "button". The "button", the loss of which provokes grief, seems to be an omnipotent illusion arising from a confusion between mother and baby in terms of nipple-like bodily parts and substances. Inimitably, Winnicott puts this difficult-to-describe situation thus:

"Psychologically, the infant takes from a breast that is part of the infant and the mother gives milk to an infant that is part of herself. In psychology, the idea of interchange is based on illusion." (Winnicott, 1958, p. 239.) In theoretical language, the "button" seems to be described by Mahler's (1961) concept of the "symbiotic love object". Mahler has postulated the "mother-infant symbiosis" as a condition of early infancy. In writing of the "separation-individuation" phase in which, as she puts it, "the child hatches from the symbiotic membrane", she writes of the infant's "grief" at the loss of what she terms "the symbiotic love object". She defines this object as a "fusion of self and object representations". She writes "... the mental representation of the symbiotic object is quite rigidly and permanently fixated to the primitive representation of the self. When in the course of maturational growth the ego is confronted with the incontrovertible fact of separateness, the fused symbiotic representations of self and object do not allow for progress towards individuation. We then see rage-panic reactions . . ." (Mahler, 1961, p. 341).

It seems feasible that John's illusion of the "button", arising in the confused state when bodily parts were scarcely differentiated, would be formed and maintained by sensations from nipple-like objects in his mouth and other bodily "holes". Hands and mouth could feel nipple-like non-bodily objects; tongue, saliva, lips, faeces, mucous, as well as finger-sucking, could all give him nipple-like sensations. In the

writer's experience, an important source of the "button" illusion seems to be the teat-tongue combination.

The "button" also seems to arise from an inbuilt nipple-seeking pattern which took shape again during treatment. Such an inbuilt pattern seems to be of central significance in breast-seeking activities. Piaget's (1954) observations on young babies complement and confirm inferences derived from psycho-analytic material in this respect. He found that the young infant will search for a hidden feeding-bottle if the teat is exposed, or, for a goose or stork if the beak is exposed—that is, nipple-like objects evoke his response (Piaget, 1954, pp. 29, 31 and 39). Twelve years' intensive work with autistic children has led me to think that such inbuilt instinctual responses are experienced by the child as extrusions of body stuff, as a kind of pseudopodia which reach out into the outside world and mould and are moulded by it. I suggest the term "innate forms" to describe them. These "innate forms" seem to be the bodily fore-runners of later thoughts and phantasies. They seem to be flexible moulds into which experience is cast, at a primitive level of emotional development, and which are modified by the experience so cast. When an innate form seems to coincide with a correspondence in the outside world, the child has the illusion that everything is synonomous and continuous with his own body stuff. In primitive states, pattern-seeking tendencies are active, but, since discrimination is minimal, any one part of the subject's own body, or other people's bodies, or objects in the environment can be equated. Thus, the nipple can be felt to be a part of John's body because fingers can be equated with the innate form of nipple; the knob of the humming-top could match this form; penis, tongue, "stinkers", and so on could all be equated with it and with each other. Such unmodified equations led to bodily confusions which presaged later mental ones. In this state, live and inanimate objects were treated in almost the same way—the father could be equated with a button on a cushion and the same things could happen to him. In the confused period of the presented material, it seemed that John used parts of his body, and outside objects as if they were parts of body stuff, for the manipulation of what later became abstracted as mental concepts. (Much as a child uses fingers or sticks to do arithmetical processes which later he becomes able "to do in his head".)

In these early days, when the fact of his separateness from me was forced upon him, words seemed to be experienced by him as solid objects. When he was told about the ends of sessions, or breaks in the treatment due to holidays, he winced as if something had been stuck into him. These separations seemed to be experienced quite concretely as broken things put into his body. It is difficult to know how to discuss such states, in which the singular feature is that feelings seem to be experienced as physical entities. Absence was "goneness"—"goneness" was a broken thing—"a black hole" full of a "nasty prick". The observer might speak of "depression", but for John this was a "black hole"; "persecution" was a "nasty prick"; "despair" was felt as taking into his irreparably broken body an object felt to be broken beyond repair. He did not "think" about these things; he felt he took them into his body. When the "button" was gone, anxieties rushed in as uncontrollable physical things. The pain of loss seemed to be experienced as bodily rather than mental pain.

The "black hole". This illusion seemed to have been the significant element which set in train his autistic withdrawal. This is what was left when the "button" was

"gone". This situation is not just the absence of "nice" things, which intellectually we might expect it to be. It is a situation of nasty physical presences formed in terms of bodily substances (my words came into this category). It is associated with things that are not under his rigid control and so do unexpected things and bring shocks. It is associated with the top that will not spin, my hand that will not spin it, the "button" that will not remain as part of his body. Panic and rage at this frustration makes him feel that the "naughty" object is exploded away. Rank and McNaughton (1950) report on an "atypical" child who, after a tantrum-like explosion of panic and rage, sobbed as she lay in her therapist's arms, "A piece fell out! A piece fell out!" (p. 63). When John experienced these anxieties in the analysis, in his bodily confusion he touched his penis as if to make sure that it was still there. This was obviously not the castration anxiety of a neurotic child, but seems to be an example of pseudo-phallic material associated with oral anxieties.

The material suggests that many elements cluster around the mouth-nipple (teat-tongue) experiences. Others may accrete at later stages. Perhaps one can take the place of any other. A primary classification into "nice" and "nasty" ("good" and "bad"), seems to occur at this nodal experience. The autism perpetuated a "confusional state" (Rosenfeld, 1950, p. 135), in which the primary distinctions were not made. "Niceness" is that which will be moulded in terms of innate forms and thus seem to be a continuation of body stuff. In this state, the nipple-seeking pattern is affirmed, but inbuilt patterns unmodified by a reasonably firm and consistent nurturing situation lead to stereotyped and unrealistic expectations. These expectations seem to be experienced as bodily excitation. "Nastiness" is the hard stuff that will not be so moulded to seem part of body stuff. That is "not me". This is experienced as a break in bodily continuity—as bodily damage—as a hole. It brings a sense of helplessness—a sense of "flop". This gives "primal" or "schizoid" depression its characteristic quality.

Rank (1949), quotes and agrees with Mahler that "affect-motor phenomena appear to be expressions of rage" (p. 44). She also agrees with Mahler that the psychotic child's "tantrum-like reaction to interruption . . . seem to be one of panic rather than rage, as if the child felt threatened by annihilation" (Rank, 1949, p. 44). John's material suggests that panic and rage, expressed in bodily explosions, were responsible for the hole being a "black" hole. It also seems to suggest that, because of the confusion between subject and object, as he "annihilated" the "naughty" object he felt threatened with "annihilation" himself. (Session 361.)

Work with John also suggests that this "black hole" formed as the result of frustration can be an opportunity or a threat. Bion (1962) has shown that the critical decision for development is whether frustration is evaded or the attempt is made to modify it (p. 29). The autism represents John's attempt to evade it. Some of the case material illustrates his attempts to deal with it by explosive projection (Sessions 23 and 367). On the other hand, his first words ("Gone!", "Broken!", "Oh dear!") demonstrate that as soon as he developed even a limited capacity to tolerate the "black hole", he was stimulated to get in touch with his therapist as an object separate and different from himself. (See also Sessions 153 and 360; in the light of experiences with other children, it seems to be no coincidence that these were sessions in which he was in touch with "breast" experiences.) It is obvious that

getting in touch with the "not me" holds possibilities for development beyond the self, but as we have seen this is fraught with difficulties, since something that will not be moulded as part of body stuff becomes an inimical object as it becomes imbued with the terror and rage it provokes. The mother-child relationship seems important in cradling the child through this difficult transition.

The mother-child relationship. The early mother-child relationship of autistic children has been studied by many writers; amongst these are Kanner (1943, 1944), Bergman and Escalona (1949), Rank and McNaughton (1950), Mahler (1952, 1961), Rubinfine (1961), Meltzer (1963). Most workers seem to be agreed that constitutional factors in the infant are important in the development of autism. Tischler (1964) read a moving paper at the International Congress of Psychotherapy concerning some of these mothers' heart-broken attempts to get in touch with their inaccessible children. Meltzer (1963) writes that these children are usually born "in a period of parental separation and turmoil particularly characterized by depression in the mother". The writer's experience confirms this.

The case-history showed that John's mother had environmental difficulties which made her insecure and distressed, and which hindered the establishment of an ongoing relationship with her baby. But, in addition to these more obvious causes of insecurity, she may have had the post-partum depression of feeling that in giving birth to her infant she had lost a part of her body. (Hayman, 1962, pp. 135-139; Mahler, 1963, p. 316.) Her own unresolved anxieties about such a loss, combined with the fact that she had little help from her environment in bearing them, would make it difficult for her to bear similar ones in her infant. In addition, John was an unresponsive infant; it is conceivable that, as the result of his weak sucking, the loss of the teat might be a fairly constant feature of his infancy. The infant's awareness of loss of the teat must bring home to him his own helplessness to replace something that is "gone".

In earliest infancy, the coincidence of inbuilt patterns with correspondences in the outside world seems to be the first "holding situation"—"The mother places the actual breast just where the infant is ready to create and at the right moment" (Winnicott, 1958, p. 238). Mother and baby, teat and tongue work together to produce the illusion of continuity and to confirm it. Both Winnicott (1958, p. 238) and Milner (1955, p. 100) have stressed the importance of ample opportunities for such illusion in early infancy and the dangers of a premature impingement of separateness. But coincidences are not always exact, nor are they always forthcoming, and Bion (1961, 1963) has increased our understanding of this early situation by delineating the role of the mother as a "container" for her infant's anxieties. He has shown the value of Klein's concept of projective identification in describing the means whereby this seems to be achieved. (1963, p. 31; 1961, p. 308.)

"Identification by projection implies a combination of splitting off parts of the self and projecting them on to (or rather into) another person. These processes have many ramifications and fundamentally affect object relations." (Klein, 1963, p. 58.) As the writer understands it, in relation to the primitive states described in this paper, the unconscious processes of projective identification are based on capacities for empathy, for the seeking of correspondences to inbuilt patterns, and for the making of equations or identities. Difficulties in understanding this concept seem to come from

the confusion of subject and object, which is intrinsic to its nature. It is an important concept since it provides a scientific description for the "dialogue" (Spitz, 1963) between mother and infant which seems "quasi-mystical" (Rank, 1949, p. 43).

These processes seem to be a dialectic or "feed-back" system of illusion, the to-and-fro of which (if the mother responds in a reasonably balanced way which sorts out actuality from omnipotent illusion without ignoring the need for the latter) can produce the illusion of bodily projections being "contained" and modified. This illusion can be prematurely assailed by the "implosion" (to use Laing's apt term to designate the way in which the infant may experience it, 1960, p. 47) of external reality. In earliest infancy, the infant's lack of discrimination and the mother's adaptation arising from empathetic identification with him in the form of "reverie" (Bion, 1961, p. 309), serve to minimize the explosion-producing gap between primitive illusions and actuality. This empathetic reciprocity fosters the illusion of bodily continuity and gradually acclimatizes the nursing couple to the dimly apprehended fact of separateness. It enables the mother to support her infant through the turbulence arising from awareness of separateness: separateness which seems to be experienced as a break in bodily continuity—as a loss of a part of the body. Changes of state, for example from "button-in-mouth" to "button-gone", inevitably bring tensions; tensions experienced as bodily turgor, to be relieved by bodily discharges. A mother with unbearable, unformulated infantile insecurities, and little support in bearing them, finds it difficult to take such projections from her infant. In Winnicott's words, she finds it difficult to give "freedom to the baby to move and act and get excited" (1958, p. 310). When the infant is a particularly anxious one, a distressing situation develops. Explosive projections are felt to rupture the nurturing situation; bodily tensions are felt to vapour into the "hole" and to make it "black". This rupture is not felt to be "held", healed, and modified, by a responsive mother's ministrations, through the medium of which she conveys her experience, acceptance and understanding. Instead, the "black hole" seems to be bandied between mother and infant through the bodily channels of empathetic communication; breakdown of the on-going processes of projective identification occurs. The infant withdraws from the mother and there is deviant proliferation of the processes of projective identification in terms of excessive body-centred omnipotence; Bion terms this "hypertrophy of projective identification". (Bion, 1961, p. 307.)

The capacity to sustain an insecure infant seems to be related to the capacity to pay attention. A mother in an insecure and unhappy state very easily succumbs to attacks on her capacity to pay attention to her infant—to "hold" him in her awareness. Such attacks may come from her own unresolved infantile problems, or from outside events and people, or from her own infant, or, more usually, from a combination of these. In the case of her own unresolved infantile problems, as she empathically experiences her infant's states she becomes pre-occupied with her own; attention is gone, her mind wanders. It seems that if a mother, through no fault of her own, is absent in mind, the "holding situation" (Winnicott, 1958, p. 268) is broken just as much as by a traumatic bodily separation between mother and baby. It is feasible that this "holding situation" is affected by the parents' relationship with each other, in that this affects the way in which the mother responds to an infant

who is the outcome. A breakdown in the "holding situation" means that the naïve infant is left to bear intolerable anxieties alone. Stresses and strains accumulate. Continuing to use his own body as if it were the mother's, and the mother's body as if it were his own, gives him the protection of the illusion of continuity, but he remains undifferentiated from her and confused with her. When this omnipotent illusion is assailed, the loss of the "symbiotic love object" exposes him to the grief and terror of the "black hole and the nasty prick". With little help in bearing these, the infant is driven to increased use of sensations in his own body, with the cumulative effects exemplified by the autism. John had become more and more out of touch with ordinary human beings who could help him, and more and more enmeshed in terrors associated with the "black hole"—"a nameless dread" (Bion, 1961, p. 309)—"a not-knowing" (Winnicott, 1958, p. 250). The realistic fear of dying pales by comparison with these agonies and terrors. As the result of these overwhelming anxieties, John had stayed in the stage of casting everything in terms of innate forms, equating everything with body stuff. There was despairing longing for an overvalued, extraordinary "button" which seemed to become equated with an omnipotent nipple-penis-father.

It seems that in normal development, as the mother appropriately tends, grooms, and toilets her infant, and gradually helps him to do these things for himself, so she helps him to develop a mind of his own. Projections of body stuff are felt to be held and modified by a mother's ministrations; identification with an ordinary human being begins to take place instead of with an extraordinary object made in terms of body substances and processes. Tension becomes sustained until appropriate action can be taken. Thus, the capacity for representation and the use of skills develops. Dreams begin to take the place of random discharges and bodily movements. Innate forms begin to be transformed into thoughts and phantasies. The psyche, as we know it, begins. At a level suited to his age and physical development, the analysis did this for John. An important aspect of this was the taking of his projections and, when it could be done, the finding of words for what had been inexpressible horrors; this made them seem more manageable and less dreadful. They were felt to be "contained" in a medium shared with others and this was a support. Prior to this, John's experiences had been intensely peculiar to himself, eccentric and relatively unshareable by the normal modes of communication.

Communication. In primitive states, the "button" seems to be experienced as an ever-present tangible link with the mother. The material presented in this paper suggests that grief about the breaking of this link, which is felt to communicate as well as to bind, has to some extent to be worked over in the mother-child relationship before the more normal forms of communication can begin to develop. This development of communication is related to the development of a sense of personal identity. John's use of the personal pronoun came when he became hopeful about mending things (Session 118). This "mending" that he became able to do, albeit omnipotently, and that he gradually began to trust me to be able to do, was associated with being able to grieve for the "button", and to bear the terrors associated with its "goneness". He seemed to go through primitive processes of mourning; as he relinquished his hopes of finding the "button" in the outside world, it became established as a construct of his mind. This establishment of the "button" as the

corner-stone of John's psychic world seemed to set in train communication with himself and with others. The analytic situation gave him no actual experience of anything like the "button" (sweets, food or feeding bottles were not provided, nor were caresses and kisses), it merely helped him to tolerate feelings concerning its loss. The simple equipment, the regularity of the sessions (in so far as this was possible), the adherence to a disciplined technique, the analytic attention and vigilance, and the interpretations seemed to provide a "container" (a "cradle" as John himself expressed it), in which John's baby self could begin to grow. Meanwhile, the parent's sensible handling of 3½–6 year old John was an indispensable adjunct to the therapy.

SUMMARY

The writer's experience, within a Kleinian framework, has brought confirmation of the critical importance in the development of autism, of a primitive type of depression associated with grief concerning the loss of an illusory object formed from a confusion of bodily parts of mother and infant. Case material from a mute 3½ year old autistic boy has been brought to demonstrate the part played by mouth-nipple experiences in the formation of this illusion (termed by this patient, "the button"). The relation of this illusion to on-going development and to communication has been suggested. The importance of the mother-infant relationship in which the mother is felt to "contain" the projections of her infant so that this illusion is not prematurely assailed has been discussed. The autism has appeared to be a primitive defence against experiencing the depression and the persecution (a "black hole" and a "nasty prick") which resulted from the loss of the illusion of an omnipotent "button".

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A NOTE ON OBSERVATIONS OF YOUNG CHILDREN WITH THEIR MOTHERS IN A CHILD PSYCHIATRIC CLINIC

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OVER a six months' period of routine work in a child psychiatric clinic I observed eighteen children, referred with behaviour disorders, who could not be interviewed in the customary manner because of unco-operativeness, lack of speech, or unwillingness to separate from mother. Cases of subnormality of intelligence and psychosis are excluded from consideration.

Instead, for at least one and usually several sessions, the mother and child were seen together in a playroom. A social worker was sometimes present. Whilst the mother was being interviewed, the child was left to his own devices to remain with her, or explore the room and play with toys, as he wished. There were 2 children aged 2 yr, 5 aged 3, 6 aged 4, 2 aged 5, 2 aged 6 and 1 aged 7. Ten were boys and 8 were girls.

Some highly characteristic behaviour patterns, common to most of the children, were observed in this situation and an attempt was made to describe them after the manner of ethologists. The basic method used by ethologists is the precise description of actual observable movements (Darwin, 1892) which are the same every time they occur, to note any sequences of such stereotyped patterns of behaviour, and to relate these patterns to the situations in which they are observed. Tinbergen (1950) has outlined the theoretical basis of ethology and Bowlby (1957) has discussed its application to child psychiatry.

Although there is a considerable amount of literature describing the behaviour of ambulant pre-school children (Wright, 1960), very few studies have been carried out using ethological techniques and concepts in this age group. Notable exceptions are the investigations of Blurton-Jones (1963) and Ainsworth (1963).

OBSERVATIONS

The eighteen children showed three main groups of behaviour patterns:

Group 1. Attachment.

Group 2. Shyness.

Group 3. Exploration.

Group 1. Attachment

This category was divided into three sub-groups:

a. *Proximity*. The child stayed near his mother. Speech was unusual and there

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was a general reduction in bodily activity. His* face assumed a serious expression. Frowning or crying sometimes occurred. Finger-sucking, sighing, rubbing the eyes, yawning and repetitive movements of hands and feet were frequently observed.

b. Contact. The child leant on his mother, clambered over her, or remained sitting on her knees. His hands rested on her, held her hands, or grasped her clothes. His face usually pressed closely against her arm; occasionally his head was buried in her lap. Kissing and whispering sometimes occurred.

c. Approach and following. During any excursions about the room, there were frequent approaches to the mother. She was looked at, smiled at and spoken to. Toys that were picked up were commonly brought close to her, and then shown or given to her. The child immediately followed his mother if she made any attempt to leave the room and he cried, with or without stamping his feet, if she tried to stop him following her.

Group 2. Shyness

When this behaviour was shown the child kept his head and eyes turned downwards, and to one side, in a characteristic pose. Speech was exceptional. He occasionally peeped at the doctor from behind his mother and averted his eyes when looked at. Strangers were not approached. The forearm was sometimes held up in front of the face. Hanging back, crying, and verbal protestations, sometimes occurred before the child was persuaded to enter the room initially. During the course of the session he intermittently moved towards the door and spoke of going home.

Group 3. Exploration

The room was visually explored and objects were approached and examined. Play was accompanied by speech. A general increase in bodily activity occurred and emotional expression became freer. Strangers were not avoided; they were sometimes smiled at and spoken to.

There was, on the whole, an inverse relationship between *exploration* and the other behaviour patterns which was least evident in the case of *shyness*. *Contact* usually occurred early on in a session, followed by *proximity*, which then gave way to *exploration* punctuated by *approach and following*. Some children remained next to mother for most of the time (the interviews lasted from forty minutes to one hour) but made quick dashes to collect a toy, now and again, in a manner strikingly reminiscent of infant monkeys in an analogous situation (Harlow, 1961).

The children who showed an excessive amount of *attachment* were usually under 5 yr of age and had manifestly anxious mothers. *Contact* appeared to be intensified by a recent minor illness or injury. An unusual degree of *shyness*, occasionally amounting to "elective mutism", seemed to be associated with an isolated upbringing by introverted parents. The combination of marked *exploration* and minimal *attachment* was found to occur in neglected and emotionally deprived children. Some youngsters referred for aggressive conduct disorders vacillated between bold *exploration*, hasty *approach and following*, and fleeting *contact*.

* The child is referred to by masculine pronouns, even if a girl, to facilitate description.

DISCUSSION

A child who shows *attachment* behaviour is demonstrating the bond between himself and his mother. This is especially evident in the case of the sort of *attachment* that has been designated *contact*, since the child holds on to the mother and presses himself against her. Similarly, in *proximity* behaviour the child appears motivated to remain near the mother despite attractions elsewhere. Also, in the third kind of *attachment* behaviour, described as *approach and following*, the child is constantly interrupting other activities to communicate with the mother, include her in what he is doing, and move closer to her, particularly if she herself moves away from him.

On the other hand, *exploration* represents a basic human activity which serves the purpose of acquiring knowledge (Piaget, 1953). It is probably controlled by a different instinctual mechanism to that governing *attachment* behaviour.

The third group of behaviour patterns observed in the situation described, *shyness*, would also seem to be independently motivated. There is some developmental evidence given by Schaffer to suggest that this is so. He wrote: "the mode of the fear distribution occurs about a month after that of the attachment distribution. The tendency to seek the company of familiar individuals and the tendency to avoid the company of strangers cannot therefore be regarded as merely the opposite sides of the same coin." . . . "We are dealing, therefore, with two distinct functions . . ." (Schaffer, 1963).*

The three types of *attachment* behaviour show the child's relationship with his mother in different ways. In *contact*, his attention is often almost completely focused on the mother. Conversely, in the case of *approach and following*, the child is usually engaged in exploring the room and only breaks off from this, momentarily, to move close to his mother and perhaps engage in brief physical contact with her. In between the two, *proximity* behaviour is characterized by general passivity and intermittent incomplete movements in the direction of the toys or towards the mother. It is possible to explain these differences on the basis of the simultaneous activation of contradictory motivations. In *contact*, being with mother and fleeing from the stranger are predominant over exploratory tendencies. In *exploration* the converse is true. Whereas *proximity* represents a more balanced interplay of opposing urges.

There is some support for these views in the findings of ethologists who have studied animals in situations of conflict (Tinbergen, 1950). When two incompatible actions are activated at the same time one of them may be expressed in an incomplete form: as an "intention movement". The child near his mother who makes as if to move in the direction of toys on the other side of the room, but stops short, is showing intention movements of *exploration*. Similarly, many of the *approach and following* behaviour patterns are intention movements of *attachment*. Another possibility, when two contradictory activities are simultaneously aroused in an animal, is the occurrence of completely unrelated behaviour, such as eating, when fight or flight would be appropriate; this is called a "displacement activity" (Tinbergen, 1959).

The finger-sucking, eye-rubbing, rhythmical movements, yawning and sighing which the child showed in *proximity* behaviour are probably displacement activities. The passivity observed in *proximity* is analogous to that encountered in animals in a state of strong conflict (Bastock *et al.*, 1953-4).

Lastly, ethologists have described "displays" which are derived movements (such as intention movements or displacement activities) adapted in the course of evolution to function as signals in social activity. A typical example is "facing away" in *Laridae* which occurs when a tendency to flee is counteracted by approach responses. The turning of the head has become stereotyped (ritualized) and acts as an "appeasement" gesture; that is it reduces fighting behaviour in an aggressor (Tinbergen, 1959). It is suggested in the situation under discussion that the characteristic hanging of the head in *shyness* behaviour is a display resulting from the simultaneous activation of tendencies to flee, to remain with mother and to explore; and that it serves to appease the stranger.

The observations recorded above suggest that the following factors may be important in the regulation (that is the duration, the sequence in which they occur, and the relation to other actions) of the various behaviour patterns: the child's age, physical health and previous emotional experiences; the mother's personality and social class; and the length of time they were exposed to the new situation. Further work is needed on these points.

SUMMARY

Observations were made in the course of routine child psychiatric work on the behaviour of young children with their mothers in a playroom.

Some highly characteristic behaviour patterns were observed in the children. The three main groups of them were called: *attachment*, *shyness* and *exploration*. *Attachment* behaviour was sub-divided into: *contact*, *proximity*, *approach* and *following*.

The motivational processes determining the various patterns of behaviour were discussed. Each of the main groups described was thought to represent a distinct motivational tendency. *Attachment* was concerned with maintaining physical contact with mother, *shyness* involved impulses to flee from the strange observer, and *exploration* was the expression of urges to explore the contents of the room.

Some items of behaviour appeared to result from the simultaneous activation of opposing motivational tendencies. These expressions of conflict were considered to be appropriately described as "intention movements", "displacement activities", "displays" and "passivity" using the terminology of ethologists who have studied the manifestations of conflicting instinctual processes in animals.

The duration and sequences in which the behaviour patterns occurred were related to various possible regulating factors in the child and his mother.

Ethology provided the theoretical basis of the study and the methods used.

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CRITICAL NOTICE

Modern Perspectives in Child Psychiatry. Edited by JOHN G. HOWELLS. Oliver and Boyd, London, 1965, pp. xxix + 595. £5 5s.

THE BOOK is divided into two sections. Part I deals with the scientific basis of child psychiatry, and Part II with the clinical aspects. As an initial reference volume, this work serves a useful purpose. On the whole, the selection of topics is good but the quality of the chapters varies widely. Some of the best present well-organized, critical reviews of the area under consideration, together with a clear statement of the author's own approach. The least helpful chapters have a polemic quality not pertinent to the topic itself and a failure to give an organized presentation.

It seems appropriate, therefore, to discuss the volume chapter by chapter in order to identify the strengths and weaknesses of each.

Editor's Introduction. While heartily agreeing with Dr. Howells' emphasis on the importance of childhood psychopathology and its relevance to adult emotional illness, this reviewer considers that an undue claim is made in the statement that "treatment at an early age . . . goes a long way toward guaranteeing emotional health in an adult". It is of course better to have an emotionally and behaviourally adapted child than an ill-adapted child, but good paediatric treatment does not guarantee against physical illness in adulthood, and one should not expect more from the field of psychiatry. Support of Dr. Howells' statement would require considerably more follow-up data with controls than exists in the field of child psychiatry. The observation might be expressed as a hope, but certainly not as an actuality.

Chapter I—Research Methodology in Child Psychiatry, by H. GWYNNE JONES

This opening chapter assumes no prior knowledge on the part of the reader. The material is presented clearly and logically and the reader is cautioned about the tendency in research to overlook the ambiguity of child responses and to treat the investigator's interpretation as if it were hard fact. The author makes a very pertinent point: "A discussion of the difficulties encountered in psychiatric research cannot be concluded without mention of the gap between the complexity and sophistication of many theories widely accepted as valid, and the inadequacy of the empirical data which support them."

Chapter II—The Contribution of Ethology to Child Psychiatry, by EWAN C. GRANT

This chapter is a somewhat limited and mechanical presentation. It tends to go from behavioural description to motivational interpretation that does not derive from the data. Analogies are made between animal behaviour and human behaviour on the basis of descriptive similarity. Animal studies can make a great contribution in raising hypotheses and indicating possible experimentation in child psychiatry, but this is not adequately presented.

Chapter III—The Genetical Aspects of Child Psychiatry, by VALERIE COWIE

Appropriately, the chapter offers an historical discussion of human genetics as well as of methods of gathering genetic material. There is a presentation of the contradictory genetic data that have been reported by workers in this field, and an excellent discussion of genetic counselling. The data are given without any unwarranted speculation, and in presenting the work of others, the author clearly distinguishes between fact and hypothesis.

Chapter IV—Piaget's Theory, by MARY WOODWARD

Piaget's theories, which have come into prominence in the psychiatric world in the past decade, are summarized clearly and concisely in this chapter. Criticisms of Piaget's theory are briefly reviewed. Discussing extensions and applications of his theories, the author raises some interesting and useful issues. On some points she expresses agreement with Piaget, while noting that his findings conflict with various theories regarding the capacity of infants for symbolic and cognitive functioning.

Chapter V—The Development of Perception, by M. D. VERNON

While this chapter represents a good summary of the knowledge that has been gained by observations on children in perceptual studies, it mainly demonstrates the poverty of our information. Fortunately, studies are now going on with regard to hierarchies of sensory modalities. These could not have been included, since they have been published only in preliminary form.

Chapter VI—The Application of Learning Theory to Child Psychiatry, by H. J. EYSENCK and S. J. RACHMAN

This rather lengthy chapter is an excellent presentation of Eysenck's theoretical formulations. The application of his approach to children is discussed mainly in terms of phobias, stuttering, tics, and autism. The chapter makes clear Eysenck's division of such issues into neurotic problems caused by conditioning, for which the treatment is deconditioning, and another group of problems such as enuresis, which he attributes to lack of formation of appropriate conditioning. The recommended treatment for this latter group is to create the appropriate conditioned responses through aversive conditioning, using operant conditioning techniques. The authors comment that the application of learning theory to clinical problems has been slower in children than in adults. Behaviour theory is more clearly applicable to adults because it has provided more techniques for eliminating unadaptive behaviour than for developing desired behaviour.

Chapter VII—Thinking, Remembering and Imagining, by PETER MCKELLAR

This chapter reads as if it were given as a lecture. This is a disadvantage to the reader, since the organization is not as tight or logical as one might wish. Many of the individual and very personal examples cited are not of sufficient importance to justify the space they take up in a chapter on such a large topic.

Chapter VIII—Exceptional Children, by E. M. BARTLETT

This chapter is rather disappointing because it is an uncritical review of the work done in the area under discussion. The author makes some unsupported assumptions, such as the observation that "... some of these exceptional children seem stubbornly to resist any attempt to force them or to teach them prematurely, as if some unconscious mechanism is at work to safeguard them from early and harmful exploitation" (page 200). There are several other equally basic and equally unsupported assumptions which seemingly derive only from personal opinion, as no indication is given that the author has made an attempt to test them.

Chapter IX—Normal Child Development and Handicapped Children, by ELSPETH STEPHEN and JEAN ROBERTSON

This chapter represent careful but uninspired reportage of an uncritical nature. Since it seems to be exceedingly complete, it serves as impressive documentation of the paucity of our actual knowledge.

Chapter X—Child Psychopathology, by FREDERICK H. STONE

It is unfortunate that a chapter entitled "Child Psychopathology" should be given from a purely psychoanalytic view, since this is the only chapter in the book dealing with this topic. Reference is made to non-analytic sources in very brief summary; the actual discussion, however, is purely psycho-analytic, and very meagre at that.

Chapter XI—Organisation of Child Psychiatric Services, by JOHN G. HOWELLS

This chapter is written as if it were a blueprint for all child psychiatric out-patient settings which are located within a general hospital. In fact, it presents Dr. Howells' preferred type of family psychiatry as if this were identical with child psychiatry. In the two sections entitled Facilities and Treatment, sweeping platitudes are combined with great minutiae. The use of psychopharmacological agents is disposed of in one sentence. The diagnostic concept used in the chapter seems to consist of the term "emotional disorder".

Chapter XII—The Psychiatry of Adolescents, by WILFRID WARREN

It was a pleasure to read this chapter. Clearly and economically written, this is an excellent summary of the material available on the psychiatric approach to adolescence, and it corresponds to the clinical experience with which this reviewer is familiar.

Chapter XIII—The Psychosomatic Approach in Child Psychiatry, by PHILIP PINKERTON

The author of this chapter makes frequent comments on the difficulty of the ordinary physician's understanding of psychosomatics, and spends unnecessary time decrying the shortcoming of medical school teaching with regard to the psychological part of history-taking. The presentation of the psychosomatic approach is not systematic, and one is left with a poor polemic and many long individual case histories.

Chapter XIV—Disorders of Speech in Childhood, by C. WORSTER-DROUGHT

This is a clearly written and orderly presentation. As a reader's initial reference to the topic of disorders of speech, it serves a useful purpose. There is no attempt made to go into special research or theoretical formulation, which might be of interest to a more sophisticated group of readers.

Chapter XV—Accident-Proneness, by GERARD VAUGHAN

This chapter is a potpourri of explanations regarding accident-proneness. It would have been more helpful had these diverse explanations had been grouped in some logical fashion and critically discussed by the author. The author's comment that "a review of the subject quickly tends to become a somewhat disjointed list of observations" (page 365) need not have been true.

Chapter XVI—Delinquency, by P. D. SCOTT

In a very difficult area of concern, with a multitude of theoretical and practical approaches to an enormous topic, the author has done an excellent job of organizing the confusion. He includes his own personal views, with which the reviewer is in vigorous agreement, including the warning against the automatic invoking of psychiatric treatment for delinquents. Dr. Scott gives an excellent discussion of the limitation of the psychiatrist's effective sphere.

Chapter XVII—Suicidal Attempts in Childhood and Adolescence, by P. H. CONNELL

This chapter handles a difficult topic in an excellent manner. After summarizing the literature succinctly and clearly, the author outlines the practical clinical issues facing those interested in diagnosis and treatment of children and adolescents who present threats and attempts of suicide.

He includes a summary of a survey of this problem in the Newcastle area, in which Dr. Connell was involved in a senior capacity.

Chapter XVIII—The Psychiatric Aspects of Adoption, by HILDA LEWIS

This is a pedestrian but clear and careful discussion. It is a fairly comprehensive review of the situation regarding adoption in England, but many of the points made are generally applicable.

Chapter XIX—The Neuropsychiatry of Childhood, by D. A. POND

While this chapter is written in a refreshing style, it actually discusses only a limited area of neuropsychiatry in childhood. Discussion of the neuropsychiatry of the convulsive disorders is excellent and detailed. The questions of other aspects of brain damage, their behavioural concomitants, as well as their treatment, are dealt with in limited and summary fashion.

Chapter XX—The Psychoses of Childhood, by GERALD O'GORMAN

This is a clear and well-organized presentation of the various opinions in the field. I would question one statement of the author regarding treatment of schizophrenic children: "... there seems little doubt that some form of psychotherapy offers the best chance of success". This conclusion does not actually flow from the material presented. However, it seems to be the author's personal opinion.

Chapter XXI—The Aetiology of Mental Subnormality, by BRIAN KIRMAN

A full and very well organized review of a most difficult area, this chapter is well worth using as a basic reference. The author's own studies have been used as illustrative material of general investigatory trends, and this has been done in a way that serves to clarify and point up issues of importance.

Chapter XXII—Child Therapy—A Case of Anti-Social Behaviour, by D. W. WINNICOTT

One of Britain's foremost child psychoanalysts applies to a single case his theoretical approach to brief psychotherapy. He focuses the discussion on three psychotherapeutic interviews, asserts the psychoanalytic interpretations which he derives from these, and explains how his conclusions were used to direct the parents in their handling of the child through discussion and correspondence.

Chapter XXIII—Children's In-Patient Psychiatric Units, by W. J. BLACHFORD ROGERS

While written in a chatty and informal manner, the discussion is very informative and very practical. The point of reference is the author's specific experience in the Crichton Royal Hospital. The illustrations are well selected. This chapter could be quite helpful in a practical sense to anyone involved in an in-patient children's unit.

Chapter XXIV—The Contribution of Psychological Tests to Child Psychiatry, by JOHN R. LICKORISH

This is a good presentation of the topic, with the issues stated in a clear and well-organized manner. The author is cautious about the objectivity of many tests, and clearly states the basis of his caution. He gives helpful qualifications about the usefulness of results; for example: "Psychological tests cannot by themselves identify organic defects, but they may suggest the existence of defects and indicate the need for further investigation". This is a very helpful summary.

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New York.*

STELLA CHESSE

BOOK REVIEWS

The Child: WILLIAM KESSEN. John Wiley & Sons Inc., New York, 1965, pp. xiv + 301. \$4.95 (hardbound); \$2.95 (paperback).

THIS BOOK is the fourth in a series edited by Professor Kessen and Professor Mandler under the title of "Perspectives in Psychology". Each volume consists of a sequence of readings designed to show how "the current psychological scene" in some particular field of work has developed out of the labours of earlier pioneers. Professor Kessen has chosen sixteen extracts from "the history and prehistory" of child study, and links them by brief introductory explanations and supplementary annotations or comments. It is a little surprising to find the writings of Locke, the earliest author selected, described as part of the "prehistory". One would have expected the "psychological perspective" to start with Plato's ideas on nature and nurture and his celebrated scheme of education, and to continue with the theories of the notable educationists of the Renaissance. Instead the editor's "Introduction" opens with five pages on breast-feeding and a couple of quaint abstracts—one on "Nursing" taken from a forgotten physician of the early eighteenth century and the other on "The Character of Childhood" by an equally eccentric Sunday school teacher of the early nineteenth century. The guiding purpose, we are told, is to demonstrate "the development of ideas on children" from the crude and ludicrous notions of the past to the achievements of the three final contributors—Watson, Freud, and Piaget, described in the concluding chapter-heading as "workers of a grand design".

The excerpts from Locke, Rousseau, Pestalozzi, Darwin, and Binet are skilfully chosen and usefully annotated. On the other hand, there are none from any British psychologist—Bain, Spencer, Galton, or Sully. Herbart does not receive even a passing mention, though in this country his influence has been far greater than that of several other nineteenth-century "precursors" whose theories are discussed at some length. The topics selected for the later portions of the book relate to out-of-the-way problems which are scarcely representative of the various authors' maturer views—Hall on dolls (not on adolescence), Taine on language (not on intelligence), Baldwin on habit (not on mental evolution and development), Watson on fears (from a book Watson himself subsequently stated he "felt sorry about"), and not, as one might have expected, on habit, learning, or conditioning. Skinner is praised for his "consummate skill"; but there are no quotations to exemplify either his techniques or his influential theories.

As might be expected from the editors' previous book, *The Language of Psychology*, the comments display a marked neo-behaviourist slant. There are no extracts to illustrate the application of correlational techniques to the analysis of mental factors, nor to demonstrate the influence of genetic endowments on the wide range of individual differences. Of Galton it is said that "it would have been fatal to his method and conclusion to assume some mechanism other than heredity might help to produce the pools of familial talent he discovered", though Galton did in fact fully recognise, even if he did not fully allow for, environmental influences. "Watson's lasting contribution to our knowledge of children", we are told, "is centred on his exciting proposal that parents could make of their children what they willed." Watson's "weaknesses", however, are frankly acknowledged; and Professor Kessen declares that "child psychology is not yet free of the Watsonian non-sequitur—that the objective study of behaviour entails a particular theory of the child".

Nevertheless he agrees with Watson in the rejection of "introspective analysis". With children, as with animals, so he explains, this antiquated method manifestly broke down, because children cannot introspect: yet, as the work of a succession of British investigators has shown, the introspective reports of children on their imagery and thought-processes have proved most instructive for remedial psychologists coping with special disabilities, and the introspections of delinquents and neurotics have greatly helped the clinical psychologist in his studies of so-called "problem-cases". What is still more surprising is the almost complete absence of references to planned experimental research, in the school, the laboratory, or at home. The book ends with a short section pointing out that the history here outlined reveals a change "not only in the child as object of study" but in the child's

social locus. He has moved, at least in the United States, from the periphery to the center of cultural interest."

The brief biographies and the dated details about the authors selected for comment and criticism are excellent; and for the professional psychologist the book will furnish an illuminating insight into the present attitude towards child psychology of contemporary American psychologists. No doubt too, supplemented by the editor's own lectures and other textbooks, it will provide an admirable manual for his students. The British student, on the other hand, would probably be better advised to turn to one of the many historical outlines and collections of readings that are already available from the hands of other writers.

CYRIL BURT

The Evolution and Growth of Human Behaviour: NORMAN L. MUNN. George Harrap & Co., London, 1965, pp. xi + 594. 48s.

THE NEW edition of Norman Munn's text book on human development appears ten years after the original and is closely similar in layout and topics covered. The underlying conceptual structure is clearly biological, and wherever possible a subject is treated from a phylogenetic point of view, with evidence culled from a very wide and up-to-date assessment of the literature on animal behaviour. Starting with a well illustrated account of genetic mechanisms, the author goes on to discuss unlearned behaviour and the factors underlying learning and intelligent behaviour in the context of evolutionary theory, thus laying the foundations for later exposition of the development of symbolic processes and the emergence of language in the human child.

The chapters on the development of sensory processes and spatially coordinated behaviour present some of the ingenious objective methods which have been devised to investigate these functions in infants, and a balanced account is given of the controversial theoretical issues which exist in connection with the origins of space perception. A similar balance is manifest in the discussion of the contributions of nature and nurture to the growth of intelligence.

Each chapter ends with a summary and conclusions and bibliographies spanning a wide period of time, which would, however, be more useful to the reader if authors' names were presented in alphabetical order.

Although Munn acknowledges the importance to his subject of abnormal and social psychology, data from these fields receive rather scant attention, and the chapter on the development of social behaviour is not so very much longer than one devoted to the development of spatial coordination. Studies of deprivation are dealt with in a page and a half, with only a few references which would be insufficient to lead the interested student to the large, if sometimes unsatisfactory, literature on the subject.

The book ends with chapters on the growth of personality in children and changes in personality from adolescence to senescence which are very similar to those in the original edition, and include fewer recent references than do some of the earlier sections, although the findings of Kagan and Moss and of Shields are well reported.

In conclusion, despite some weaknesses, it is likely that the book will continue to be a valuable source of information on a very important subject, both to undergraduate and graduate students of behaviour.

ANN M. CLARKE

Child Development II: Universal Stage of Infancy. S. W. Bijou and D. M. BAER. Appleton-Century-Crofts, New York, 1965, pp. xii + 183. \$1.75.

Bijou and Baer, well-known for their tough-minded experimental approach to child behaviour, are producing a series of volumes on developmental psychology in which they are systematically setting

out their particular conception of the process of psychological growth. These volumes differ from the usual textbook not only in their format (i.e. the material is not all under one cover but is distributed according to developmental stage amongst different volumes), but also in being far more theory-oriented than one usually finds in writings in this area. Whether this is a good thing or not in this particular case depends on one's view of the theory presented here, for it is a function of theories to guide and illuminate, yet also to select and ignore, and there will be many who will feel that the authors have ignored more than they have illuminated.

The details of the theory are set forth in the first volume of the series and show, above all, the influence of the Skinnerian system. Thus the child is conceptualised as a source of two types of responses, respondents and operants. The environment is analysed into eliciting and reinforcing stimuli, and the process of development is regarded as dependent on the manner in which responses are attached to new stimuli or become detached from old ones through conditioning and extinction. This analytic approach has many advantages, for it enforces clear thinking and ensures that the ties between data and concepts remain visible to all. The inadequacies of this stimulus-response orientation, however, are illustrated in the volume under review, for here the theoretical principles are now applied to the initial development of the human infant. In undertaking this task, the authors have deliberately refrained from presenting an all-embracing review of findings, and have quoted only those researches which fit easily into their framework. To some extent this was no doubt deliberately decided upon in order to emphasise the programmatic rather than the substantive approach chosen for presentation, but one cannot help wonder how far many of the recent findings in infancy simply had to be omitted because they would not fit into a Skinnerian framework. Thus the important topic of perceptual learning, so central to an understanding of many cognitive and social aspects of behaviour in this early period in particular, receives no mention, and similarly the topic of motivation is discussed merely in negatively critical terms. In their search for objectivity and rigour, the authors have confined themselves to searching for empirical relationships between specific circumstances and specific behavioural changes to such an extent that they have emptied the organism of all intervening variables and have produced a most sterile account of human development. This does not mean that their system will not stimulate some useful experimental investigations, but these will be of a limited nature and are hardly likely to add to our understanding of processes in the way that Piaget's observations have done.

H. R. SCHAFER

Underachievement: M. KORNICH (Editor). C. C. Thomas, Springfield, Ill., 1965, pp. xxii + 670. \$18.50.

IN THESE days of reasonably priced paperbacks it is quite absurd to charge about £7 for what is simply a book of readings. One hopes that some libraries can afford it, since the 51 papers provide a representative selection of recent American contributions to the topic of underachievement, and many of these should interest British child and educational psychologists. A considerable proportion fall into the stock pattern: take a group of high I.Q. pupils, or high school or college students, and divide them into those getting good and poor grades. Apply various personality, attitude or projective tests to them (or their mothers) and find the statistical significance of any differences. Often the hypothesised differences fail to appear, or if they do they seem to contradict those claimed by other investigators. However an extremely wide range of characteristics of personality, upbringing, study habits, aspirations and self-concepts and culture patterns has been studied, often by quite ingenious techniques, and some of the inconsistencies doubtless arise because different age, sex and other groups do behave differently. For example, one of the most striking findings (by M. C. Shaw and J. T. McCuen) is that underachieving senior high school boys were somewhat backward all the way from Grade 1 up, whereas underachieving girls were average or better up till Grade 6. Other articles suggest that boys and girls react in opposite fashion to over-restricted home upbringing.

Then there is a large group of clinical studies, tracing the dynamics of underachievement in particular cases, which often provide interesting insights. But it is as well to take account also of such studies as that of J. S. Coleman showing that, in many American high schools, a major cause of

poor achievement is glorification of the athlete and devaluation of the intellectual. A further section of the book contains papers on treatment, whose results seem to be almost wholly negative whether the treatment consists of special remedial schemes, home visits, or individual or group therapy. And at least one author admits that the underachiever is often simply hostile to school or to attempts to help him. His interests lie elsewhere, or he is projecting onto the school his rebellion against one or both parents.

Three authors question the whole concept of underachievement, and unfortunately theirs are the only papers which have not been published elsewhere. The Editor, M. Kornrich, brings out some of the illogicalities of definition: what is the criterion of how pupils *should* achieve—parents', teachers' or the pupil's own expectations, intelligence tests or past achievement record? R. Schwitzgebel points out that the underlying notion is that pupils could do better but won't, so we interpret this as a kind of delinquency on their part, forgetting that it may be as much our fault for putting them in the wrong environment, or teaching them badly, or expecting them to fulfil our needs rather than their own. Moreover the underachiever has not in fact failed to learn, but he has learnt hostility, inattentiveness, getting by with as little as possible, or perhaps success in athletics or social popularity, instead of what we wanted. G. T. Kowitz is even more provocative along the same lines. He also draws attention to the high unreliability of any measure of discrepancy between I.Q. and achievement, and asks why psychologists are not equally concerned with the opposite kind of deviancy—the student whose achievement is much higher than expectancy. This chapter should be required reading for all concerned with scholastic adjustment.

P. E. VERNON

Criminology in Transition: Essays in Honour of Hermann Mannheim. Edited by T. GRYGIER, HOWARD JONES, J. C. SPENCER. Tavistock Publications, London, 1965, pp. 308. 45s.

THIRTEEN former students of Hermann Mannheim, all distinguished in their various fields of law, administration, psychology, probation, psychiatry and academic criminology, have each contributed a chapter on some special topic of their own. T. P. Morris, whose recent survey of Pentonville will surely become a sociological classic, discusses the social structure of prisons. Their traditional power structure, shared with military camps and other *total institutions*, emphasizes a basically authoritarian pattern of command, accentuated in England by the social class differences between the higher and lower echelons of staff. Lack of communication may in part account for the official reformatory aims of the prisons having little relevance to the beliefs and practices of the lower grades. J. P. Martin describes the problems of organizing after-care for discharged prisoners. After reading his account of the parsimonious and unskilled assistance doled out like charity by the old Prisoners' Aid Societies one cannot but be thankful that the new Probation and After-Care Department is taking over on a professional level. But the need remains for voluntary helpers to take a friendly interest in an individual man, in a way no professional worker with a heavy case load can hope to imitate. The New Bridge, and the Blackfriars scheme do just this, but provide experienced advisers to guide their volunteers. One drawback is the difficulty middle-class people have in meeting prisoners on an ordinary friendly footing, and the scarcity of working-class volunteers.

F. V. Jarvis gives a useful summary of the legal provisions under which reports of an offender's social background or mental health may (or in some cases must) be obtained before passing sentence. He comments perceptively on the use made of these provisions, and on the pros and cons of making inquiries before or after guilt is determined.

In the section on methodology, T. Grygier warns against ignoring the effects of interaction within a selected group, when assessing or predicting results of treatment. In a normal school, badly behaved boys, disapproved of by teachers, are unpopular among their peers, but the reverse is true in some reform schools, where staff values are rejected by the majority. Just as a dull boy put into a class of dullards may lapse still further below the educational norm, so may the deviant delinquent segregated among like cases, progress naturally to still greater deviancy. T. C. N. Gibbens, in a study of re-convictions of youths examined in Borstal, showed that the Mannheim-Wilkins system of prediction,

based on a few basic criteria of social background and previous criminal record, did not in fact distinguish very effectively between good risks and poor risks, except in a minority of extreme cases. However, by modifying the predictions, taking into account psychiatric findings on mental health or abnormality, efficiency was improved.

The final section dealing with some modern social trends includes an account by W. Clifford of the effects upon Africans of the disintegration of tribal life, with its long established traditions and sanctions, and their increasing immersion in a relatively anonymous, and distinctly anomic, urban proletariat. J. C. Spencer under the heading of "White-Collar Crime", describes the rise of new and important forms of criminal or para-criminal activity, such as infractions of price control maintenance, the borderland of tax avoidance and tax evasion, breaches of business monopoly regulations, and restrictive trade practices. In Great Britain particularly, there seems to have been a reluctance to bring the anti-social activities of high-status business men into the domain of criminal law, and to resort to special tribunals and advisory bodies instead.

As an authoritative exposition of some of the contemporary preoccupations of criminology, expounded by leading experts, this book represents a worthy tribute to a man who did so much to set up criminology as a respected field of scholarship.

D. J. WEST

Ten Studies into Psychopathic Personality. MICHAEL CRAFT. John Wright & Sons Ltd., Bristol, 1965, pp. ix + 136. 25s.

THIS book reports on ten studies into the major aspects of psychopathic disorder, which were carried out between 1958 and 1963. The clinical material in 6 out of the 10 studies is taken from work with 100 admissions to the unit at Balderton Hospital, Newark, which was opened in 1958 for the express purpose of attempting to treat psychopaths. The hospital itself was opened a year previously and is primarily a hospital for mental defectives from the county and city of Nottingham. In addition to the 100 psychopaths from Balderton, other series of psychopaths are referred to more briefly as well as series of normal controls.

The studies begin with an account of the historical development of the concept of psychopathy followed by a review of the literature on the aetiology of psychopathic personality. These chapters though concise are most comprehensive, evaluating every opinion of importance among the widely ranging views expressed from the early days of the concept to the present day. The author then goes on to deal more specifically with certain aspects of the aetiology of psychopathy, by reference to the Balderton cases and to the other series. Here, critical consideration is given to the various aetiological theories, and both the question of organic aetiology and the relevance of early adverse factors are specifically examined. The former includes an analysis of cases in which a new E.E.G. technique had been tried in Balderton.

One study in particular deals with a correlation of the severity of psychopathic disorder with severity of upsets in early parental relationships. The view is taken that psychopathy is in fact a continuum, varying from mild behaviour disorders to the most severely disturbed personalities with severe behaviour disorder (the "true" psychopath). The cases were graded by behavioural criteria into five grades of severity. Not only was it found that factors of early adverse relationships, parental separation, and brain damage were the most important aetiological factors but that the severity of such adverse factors, particularly those of parental relationships, were positively correlated with the severity of psychopathic disorder.

Reference is made at several points throughout the studies to the work of Grant, Grant and Sullivan on social maturity and integration levels. This also implies the existence of a continuum of behaviour disorder related to stages of social development, and it would appear that psychopaths corresponds to the lower "I-levels" of the Grant and Sullivan scales. One enquiry tests the hypothesis frequently made that psychopaths are defective in conscience, and studies would appear to show that this is true, though the definition of the concept of conscience itself is not exactly clear and it would perhaps be equally satisfactory to stick to the idea of social maturity as in the Grant and Sullivan studies.

The detailed clinical assessment of the 100 psychopathic cases confirms what is now the most widely and generally held view on the outstanding clinical features included in the concept of

psychopathy, namely the impulsiveness, affectionlessness, lack of guilt feelings and incapacity to learn from experience. The studies also emphatically support the view, perhaps not so widely held, that psychopathy is a continuum in which the symptoms and condition increase in severity, this also having relevance to future behaviour and possible response to treatment. In this view it is implied that psychopathy is essentially a developmental disorder. The older clinical classifications, though useful from the descriptive point of view, do not so readily adapt themselves to the "continuum" viewpoint nor to the developmental disorder theory. Taking the latter theory it would seem that possibly two categories or classification types could be differentiated—that in which there is a simple arrest of social/emotional development, and the other in which from the point of obstruction, a mal-development has taken place. This concept of a continuum—of a disorder of development in varying degrees—seems to be the one which at present most clarifies the confusion over psychopathy.

A very interesting account of results of treatment follows, contrasting the two randomly chosen series in the Balderton units. All admissions to these special units fulfilled certain criteria as regards their anti-social behaviour and had I.Q.s of over 60. They were then randomly selected, each new admission going alternatively to one or other of the units. One of these was run on democratic permissive lines, as a therapeutic community, the other with permissive and good relationships, but within a framework of staff authority. Follow-up results of these two different methods in the control period, as assessed by further delinquency, work records and general clinical states, showed that slightly better results were obtained in the more authoritarian setting. This result compares with the findings of the Grant and Sullivan studies on the correlation of social maturity and the response to different forms of social training.

Although the I.Q. range of the Balderton cases is quite wide, including some of high average intelligence, the preponderance of those in the lower range could be taken as one reason for the follow-up results. It is also likely that many of the cases were of too low a level of social maturity to be able to respond satisfactorily to the therapeutic community approach. The results do not need to be taken as meaning that the more authoritarian regimen is always better for the treatment of psychopaths, but with this particular group it was. More comparative studies of different treatment regimes are obviously necessary.

The studies of psychopathy in this book relate entirely to delinquent psychopaths, as indeed do most studies, as those are the psychopaths who are most likely to come under psychiatric observation. Some of the findings, however, could equally apply to non-delinquent psychopaths. They are all studies of male psychopaths, delinquent behaviour as a whole being in any case much commoner in the male, but the author's conclusion that psychopathy in itself is more common in the male than in the female is rather doubtful. Clinical work in other studies shows no evidence that there is any preponderance of male psychopaths, but rather the presenting symptoms in female psychopaths are less obviously anti-social.

Although this is a small book it is packed full of valuable material and indeed is admirable for the conciseness and completeness of the text. It is certainly one of the most thorough studies of this subject written. Although mainly statistical in its presentation, the introduction here and there of clinical comments, and of summaries of case material, lightens the book and makes for easier reading.

The detailed clinical descriptions of the particular psychopaths and of psychopathic personalities in general, which have come from prolonged observation and the author's own insight into this condition, show how very different this field is from general psychiatry. A psychiatrist must have considerable experience of psychopathy and forensic psychiatry in general to be able to make worthwhile diagnoses and recommendations as to management in such cases. This book clearly underlines the need for special training and experience in forensic psychiatry, and refutes the belief held in some quarters that anyone experienced in general psychiatry can practise with equal ease in the forensic field.

An account of the treatment and procedures is most interesting and the whole book indicates the great need for far more treatment facilities for this kind of patient than at present exist. It also points the way to further experimentation and a means of evaluating different techniques in the treatment of the psychopath. It is an extremely valuable book which should be read by all who wish to clarify their understanding of psychopathic personalities.

K. R. H. WARDROP

Development and Disorders of Speech in Childhood: ISAAC W. KARLIN, DAVID B. KARLIN and LOUISE GURREN, 1965. C. C. Thomas, Springfield, Ill. (Monograph in American Lectures in Speech and Hearing) pp. 311. No price given.

COMPREHENSIVE reviews in English of normal and abnormal speech in childhood are few, so that new books on the subject deserve serious attention. This joint production is dedicated to the memory of the late Isaac Karlin, a paediatrician who was among the first to develop speech clinics in the United States.

The book is divided in conventional fashion into three parts, of which the first two are relatively short and devoted to the origin and normal development of speech and language, and the mechanism for speech production. In the third part, of some 200 pages, the authors consider specific disorders of speech and language under ten separate chapters. These include good discussions of stuttering, mental retardation, hearing problems and cleft palate and cleft lip. In the chapter on speech disorders in emotional disturbances more attention might perhaps have been given to the emotional "situational" conditions which transiently produce inhibition or regression of speech in the young child; many paediatricians would disagree with the statement that such conditions are not common below the age of four or five years.

It seems a pity that the chapter on aphasia does not mention specifically acute hemiplegia in childhood, which is seen often enough in paediatric neurological practice to constitute a fair proportion of the conditions associated with aphasia and dysphasia. The capacity for improvement in speech in the young victim of a stroke, sometimes with return to complete normality, provides the speech therapist with a more rewarding task than when treating an adult with acute hemiplegia, and this difference deserves greater emphasis.

Despite these criticisms this book is to be welcomed by paediatricians, speech therapists and all those whose work brings them in contact with the speech problems of children. It is well produced and has many references.

E. BRETT

Ictal and Subictal Neurosis. Diagnosis and Treatment. A. D. JONAS. C. C. Thomas, Springfield, Ill., 1965, pp. x+128. No price given.

THIS monograph is an enthusiastic plea for the recognition of cerebral dysrhythmia as a cause of disorders of behaviour, emotions and personality. The author asserts that the frequency of this relationship has been underestimated and has increased "in the last decade". In his view the use of anti-tranquillising drugs has exposed ictal phenomena which were formerly suppressed by the convulsant action of phenobarbitone, the commonest sedative of past decades. The patient's attempts to rationalise and describe subconvulsion ictal phenomena may mislead the clinician to diagnoses like hysteria, malingering, and hypochondriasis, while epileptic equivalents and automatic behaviour may bring the patient in conflict with society. Though it may be refreshing, to some, to find that no statistics are given at all, one feels that evidence is needed and is not forthcoming, for many of the author's assertions, particularly his glib assumption of established specific correlates of various personality disorders with electroencephalographic patterns.

The book purports to be based on a study of 112 patients with "clinical indications of spontaneous firings emanating from both the temporal lobes and thalamic structures", and 50 patients with personality problems or anxiety states who "were considered a control group with respect to their responses to anti-convulsant medication", yet no data are given except fairly detailed descriptions of 21 patients, scattered through the text. Despite a remarkably unsystematic and wordy, even gossipy style, these ictal curiosities are intriguing, and the selected extracts from 226 references are useful.

We must agree with the author about the importance of recognising the great variety of ictal and subictal phenomena, and of not explaining them away by pseudo-psycho-dynamics or pseudo-diagnostic labels. It is doubtful whether clinicians will wish to emulate the use of an anticonvulsant

as a diagnostic test, particularly as the author confined himself to one drug; though great success is claimed, this was not subjected to control. How ironic was his comment that in these cases verbal therapy was only successful after the ictal phenomena were controlled by anticonvulsant?

This book could be useful to the clinician as a brief reminder of clinical possibilities and as a source of references, but as a critical review or a research report it could not. I would advise a check before quoting it.

C. J. WARDLE

Conditioning Techniques in Clinical Practice and Research. (Edited by CYRIL M. FRANKS.) Tavistock Publications Ltd., London, 1964, pp. xii + 328. 63s.

DR. FRANKS has added another collection of reprints on conditioning and behaviour therapy to the three already on the market. The aims of his book are wider than those of the others, for it is concerned with conditioned reflexes in diagnosis and prognosis as well as with treatment.

One of the best sections is the editor's own historical review of conditioning which deals with the experimental studies which form the basis of the practical applications described in the rest of the book. Of the twenty-five papers, only five relate to children, and two of these discuss relatively well known topics—the treatment of enuresis, and operant conditioning is autistic children—without adding anything new. Like many of the other papers in the book, those about children have two related faults: they try to explain too much in terms of simple conditioning, and they ignore the wider aspects of patients' problems. The psychologist who treated a little girl who was mourning her father and "formulated the problem in terms of simple conditioning with the father as the conditioned stimulus" (p. 198) provides an extreme example. But the same attitude is displayed in too many of the other papers, and it recalls William McDougall's comment, made forty years ago, that some psychologists "regard conditioned reflexes as the key to most of the riddles of the universe . . . and feel they need no longer rack their brains over the traditional puzzles of psychology". Fortunately, it is not necessary to take this narrow view to make use of conditioning techniques as part of a wider approach to the patient, as a number of other authors demonstrate.

The collection contains several interesting and stimulating papers, but it lacks balance; it is a book to dip into for new ideas, not one to read for an assessment of the state of development of the subject.

M. G. GELDER

Conjoint Family Therapy. A Guide to Theory and Technique. VIRGINIA SATIR. Science and Behaviour Books Inc., New York, pp. xiv + 196.

THIS PAPERBACK was first published in 1964; by March 1965 it was in its third printing. Such success clearly reflects the now widespread interest in family methods of treatment in America and elsewhere. The book consists of lecture notes from the author's training programme at the Mental Research Institute at Palo Alto. This unorthodox presentation does not make for easy reading, nor does it avoid a certain redundancy.

In this reviewer's opinion, the advocate of a new treatment is obliged to do three things: to describe the method clearly, to state explicitly its presumed mode of operation, and to specify how the treatment relates to pathology. On the first two counts this volume is undoubtedly successful and is to be welcomed. But it is on the third point that doubts arise, and one is immediately struck by how much is omitted and how much is uncritically assumed. Family pathology is aetiologically considered *exclusively* in terms of internal dysfunction. It is implied that all forms of psychiatric illness are much the same, with no need for diagnosis, and that all derive from one comprehensive model of marital disharmony. Consequently only one form of treatment is proposed, with no discussion of possible indications and contra-indications. This lack of clinical context leaves the reader sceptical of

the relevance of the therapeutic method: an analogous situation would exist if psychoanalysis were to be recommended for what-ails-thee.

On the other hand, the author's intention has presumably been to provide not a text on family pathology but a practical description of a method, with emphasis on technical details and a minimum of psychiatric jargon. As such it provides an interesting illustration of therapy based on a theory of interpersonal communication now receiving a great deal of attention, with more concern for what transpires between individuals in the current situation than within individuals in the past, and is to be applauded as the first manual of technique in this new and exciting field.

N. KREITMAN

Psychological Test Modifications. Compiled and Edited by MILTON KORNRICH. C. C. Thomas, Springfield, Ill., 1965, pp. 265.

THIS BOOK is written by clinical psychologists for clinical psychologists. Its purpose is to suggest ways in which they can obtain more information from existing tests. The title is rather misleading in its generality, as all the tests concerned are projective. The modifications described consist of repeating the test, asking further questions and so forth. The argument is that additional, or more valid, assessments of personality can be gained by modifying existing projective tests.

There are 15 contributors, 14 American and one English. Each author has contributed a chapter, with the exception of Jones, who has written three chapters. Each contributor describes how he has modified a projective test procedure—some working with adults, some with children. The tests modified in this way are the Rorschach, the Thematic Apperception Test, the Word Association Test and the Bender Gestalt Test. All the authors state that the test should first be administered in the orthodox way. Most of them suggest that their findings, based on their modified procedures, require further experimental validations before they can be accepted as generally useful, except by those who, like the author, have wide and relevant clinical experience. One of the authors gives an important warning against the use of modifications by people who are not thoroughly acquainted with the test itself.

The uses to which they put their modifications range from assistance in diagnosis and suggestion for treatment in psycho-therapy, to the study of marital interactions. Throughout the book there is a strong link with psycho-analytical theory. It may be that when the authors attempt to link their findings to theory, there is an unacknowledged gap. All but two of the contributors support their findings by quoting individual test records. Whereas Appelbaum and Jones present experimental evidence to support their findings, both make urgent pleas for further research.

In general the modifications of tests described provide a wealth of fruitful hypotheses. However, on the evident presented, these modifications should only be used cautiously by psychologists with a great deal of clinical experience.

ELSPETH STEPHEN

Human Growth and the Development of Personality. J. H. KAHN. Pergamon Press, Oxford, 1965, pp. 220. 25s.

THERE ARE very few books in existence which fill the gap between the popular Spock-type of baby book on the one hand and the high-level textbook addressed to academic audiences on the other. The present book is one of these very few, and is moreover by far the best that the reviewer has come across. It is perhaps not surprising that there are so few of this type, for it is surely more difficult than either of the other two kinds to do really well. Kahn, however, has the right combination of talents to do so: he is well-informed of recent developments in the "pure" field and can appraise and select with knowledgeable discretion; he knows the requirements of the "helping" professions to whom this book is primarily addressed; and he can put the material across in non-technical and (even more important) non-patronising terms. The coverage is, moreover, very wide, embracing the total developmental span from the neonatal to the senescent period, and describing not only the psychological but also the physical, social, and educational aspects of human functioning. Under the circumstances one is not in the least surprised to find among the list of recommended reading the Book of Job, *The Mill on the Floss*, *Look Back in Anger*, and *King Lear*.

In general, the book can thoroughly be recommended to those social workers, teachers, nurses, and doctors who want to understand something of the subtleties and complexities of human behaviour in the context of social relationships. This is not a how-to-do-it book: its aim is rather to provide some measure of insight into the nature of everyday behaviour and interpersonal transactions, and as such it is concerned more with normal development and decline than with psychopathological phenomena. Its appeal is thus to a very wide audience and is indeed the kind of book that should be made into a paperback. Only one point of criticism can be made: the level of writing is somewhat uneven on occasions and shows somewhat disconcertingly, in such an otherwise highly polished presentation, its origins in lecture notes used (presumably somewhat informally) in various training courses. Anecdotes and jokes are very much out of place in this discussion, and it is also a pity that the level of detail at which different topics are covered changes so very obviously at one or two points. Thus the chapter on old age, which is of a very general nature, with only a few remarks made on such important topics as the problems of retirement and the fear of death, is immediately followed by a most detailed account of deprivation, including several case presentations. These points apart, however, the book deserves that most laudatory phrase in a reviewer's armoury: it fills a gap.

H. R. SCHAEFFER

The Role of the Teacher in the Infant and Nursery School. DOROTHY E. M. GARDNER and JOAN E. CASS. Pergamon Press, Oxford, 1965, pp. 175. 19s. 6d.

MISS GARDNER, who is most distinguished in the field of education of young children, and her colleague Miss Cass, present in this book the results of many years of research in which a large number of experts have collaborated. Every year since 1950 some of the experienced teachers taking the advanced course in Child Development at the University of London Institute of Education have participated in this research work, by acting as observers of skilled Nursery and Infant teachers in carefully selected schools.

The opening chapter consists of a brief survey of the phases through which the education of young children has passed, and the relative changes in the teacher's rôle. Present-day methods, with emphasis on individual and informal learning based on first-hand experience, make far more subtle and exacting demands on a teacher than ever before. It is because of the perplexity that is often felt as to the exact nature of this rôle that this enquiry was undertaken, so that detailed information would indicate precisely what is done by good teachers when children of various ages are engaged in periods of freedom to choose their own activities. The main sections of the book are devoted to the results of analysis of the records, and examination of the evidence in relation to the teachers' techniques. These results are systematically presented under carefully classified headings with numerous cross-references and a series of histograms and tables. Much light is shed on many aspects of one of the most important questions in the minds of present-day teachers as a result of the close co-operation between trained observers and practising exponents. Nobody who is aware of the significance of early school experiences, and the effects that these can have on children in their most impressionable and formative years, can fail to find a wealth of interesting information in this extremely comprehensive study. The general philosophy underlying modern educational principles clearly emerges in the perceptive comments of the authors in their evaluation and assessment of the investigations. This useful and reasonably priced book will be welcomed, not only by Nursery and Infant School teachers, for whom it is primarily intended, but by all those in Institutes and Colleges of Education and elsewhere who are concerned with child development.

BERTHA SNOWMAN

A High School Work-Study Program For Mentally Subnormal Students. OLIVER P. KOLSTOE and ROGER M. FREY. Southern Illinois University Press, 1965, pp. 179. \$5.

THIS American book seeks to provide an alternative four-year programme (covering the years fourteen to eighteen) for those pupils for whom the usual high school curriculum is inappropriate. Since increasing numbers of these young people are staying on at school because employment at sixteen is difficult to find, the authors argue that schools must cater for them suitably and so reduce the numbers that drop out. They describe a programme with a heavy and increasing vocational bias.

English readers will, of course, be interested mainly in seeing how far the suggestions can be translated into English conditions. The traditional English distrust of introducing industrial training into education is beginning to weaken and at the present time, with Newsom-type schemes proliferating, there is much interest in making school life more realistic. It is therefore rather disappointing that the book's treatment of traditional subjects should be so sketchy. We are ready to read with interest how work experience can be grafted on to the traditional curriculum, but only if the content of the academic work is itself sufficiently full and challenging. The thinness of scholastic content is all the more serious since the authors make it plain that they are in fact interpreting their title 'Mentally Subnormal' in an extremely wide sense to include not only those who in England would be found in Training Centres or in Special Schools for the Educationally Subnormal, but also a sizeable number of children who are slow and dull and who are likely to be found within the lower forms of Secondary Modern and Comprehensive Schools—in fact, up to about I.Q. 90. A large number of these more able pupils could do much more than is here suggested. A further drawback is the extreme narrowness of the curriculum—it is thought of entirely in vocational terms plus basic subjects, and with glancing references to personal and social problems, but with no art, no music, no drama, no recreational handicrafts—in short, with a serious lack on the expressive side.

In suggesting a number of reservations it is fair to say that the book might be of interest to teachers in Special Schools and that the job analysis report in Appendix D is useful.

M. F. CLEUGH

Conversations with Carl Jung and Reactions from Ernest Jones: RICHARD I. EVANS. Van Nostrand, London, 1964, pp. 173. \$1.75.

THIS paperback presents the fruit of four interviews with Jung, and one with Jones, conducted by the author and recorded on film. The purpose of the author, who is Professor of Psychology at the University of Houston, Texas, was to obtain material suitable for undergraduate teaching as part of a larger project whereby outstanding figures in various fields would present their basic ideas through filmed interviews. This objective necessarily determines both the assets and liabilities of the book. Throughout the interviews Professor Evans maintains his clear and orderly grasp of the elements of Jungian and other psychological theories, and pursues a plan of questioning whereby he holds his distinguished subjects to the point at issue, and elicits answers more definite and concise than one might expect were they given more room for spontaneity and time to develop their ideas. The limited understanding of the film's future viewers is clearly present throughout in the interviewer's mind, and for students the book, and no doubt to a greater extent the film, may serve as a stimulating introduction to a study of Jung's own writings.

The corresponding defects result from the limitations imposed on the subjects interviewed by frequent interruptions and changes of topic, producing an inevitable superficiality and "bittiness". For those who were privileged to see the filmed interviews with Jung which were carried out by John Freeman and televised in Britain about the same time, the interviews described in this book will be a disappointment, but even so Jung's warmth and humanity, as well as his combination of profound understanding with lightness and humour, shine through, despite a ponderous seriousness of manner in the interviewer. Ernest Jones is given even less chance to elaborate his views adequately, but he also comes across as a vital and stimulating personality, though he was then in the terminal stages of the illness that caused his death.

The title of the book seems unnecessarily and indeed unpleasantly misleading, suggesting that one is to be offered the reactions of Ernest Jones to the conversations with Jung. In fact, the interview

with Jones took place first, he is never asked a question about Jung, and on the one occasion when he spontaneously mentions Jung the interviewer at once changes the subject. The book does not therefore fulfil the hope aroused by the title, that the difference in views will be clarified by some degree of confrontation between the two proponents. Nevertheless both contributors do explicitly or implicitly confirm in some of the things they say that the choice between Jungian and Freudian theory, insofar as these are felt to be incompatible, is more a consequence of personality type and emotional needs, than of any logical process.

A. C. R. SKYNNER

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THE ONSET OF FEAR OF STRANGERS AND THE INCONGRUITY HYPOTHESIS

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INTRODUCTION

THE BEGINNINGS of social development in the human infant may be understood in terms of two general behaviour tendencies, namely proximity seeking and proximity avoidance (Schaffer and Emerson, 1964). The former underlies the formation of social attachments, whereas the latter, which concerns us in the present paper, has also been described as fear of strangers or (after its approximate age of onset) as eight-months anxiety. The phenomenon has been recognized and described by many writers (e.g. Preyer, 1888; Buehler, 1930; Bridges, 1932; Spitz, 1960; Meili, 1955; Freedman, 1961; Tennes and Lampl, 1964), and has also been reported in a wide range of animal species (Sluckin, 1965).

In both human and animal development there is an initial period following birth during which no fear reactions to strangers can be found. The subsequent onset of fearful behaviour was at one time explained in purely maturational terms (Gesell and Thompson, 1934), but largely due to Hebb's (1946) theorizing is now more often considered as a function of the individual's preceding perceptual experience. According to Hebb, fear arises when an object is seen which is like familiar objects in enough respects to arouse habitual processes of perception, but is also sufficiently dissimilar to arouse incompatible processes, and thereby disrupt the central neural patterns laid down by previous stimulation. An initial period of experience is thus a necessary prerequisite in order to establish the notion of the familiar and give rise to the feeling of discrepancy with new patterns of sensory stimulation. Support for this view comes from studies which show that in perceptually naive subjects such as chimpanzees blind-folded from birth (Hebb, 1949), chicks brought up in isolation (Collias, 1950), and individuals operated on for congenital cataract (Dennis, 1934), no fear of strangers can be observed until exposure to relevant perceptual learning experiences has taken place. The considerable evidence which has accumulated on the avoidance behaviour of animals confronted by novel objects differing to a certain degree from familiar objects (Fiske and Maddi, 1963) also points in the same direction.

In a recent series of papers Hunt (1963, 1964, 1965) has proposed a theoretical framework which sets out to account for a wide range of motivational and developmental phenomena and which, by incorporating the Hebbian position, also has special relevance to the understanding of fear of strangers. Motivation and the direction of behaviour (approach or withdrawal) are, according to this view, regarded as inherent within the organism's informational interaction with its

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environmental circumstances. Behaviour is instigated by the degree of incongruity between sensory input and some standard within the organism, representing information already coded and stored within the brain as a result of previous encounters with the category of circumstances concerned. At a certain optimum degree of incongruity interest is aroused and approach behaviour results, whereas deviation in either direction will give rise to avoidance and withdrawal responses. Thus, when the inputs from a situation are too similar to the information already in storage, boredom ensues and the organism withdraws in order to seek incongruity, stimulus-change, novelty, or dissonance elsewhere. If, on the other hand, the discrepancy between input and centrally present storage is too great, the organism finds itself unable to deal with the situation and is impelled to flee. The feared object is therefore one which excites receptors in a fashion which is incongruous with the central pattern accrued as a residue of the individual's past experience. Until the central pattern has been learned, however, incongruous stimulation is impossible.

Both Hebb and Hunt indicate that fear cannot be explained in terms of sensory events alone, but that it must be related to the discrepancy between what is expected on the basis of past experience and what is observed. A period of previous relevant experience must first occur in order to establish a central standard with which new sensory patterns may then be compared. It follows that the nature of the individual's previous experience will, through a process of perceptual learning, determine the nature of the central standard and thus the parameters of the fear response subsequently manifested. It is to this problem that the present paper is addressed, its purpose being to assess the adequacy of the incongruity hypothesis in the light of data obtained in the course of a longitudinal study on the development of the fear-of-strangers response system in human infants.

The incongruity hypothesis, when applied to the development of fear of strangers, is based on two propositions. In the first place, it suggests that fear cannot develop until a central pattern has been laid down by the individual's previous learning experiences in social situations, which defines the familiar person, and with which strangers can then be compared. In the second place, the speed with which fear develops depends, on the one hand, on the extent to which the child has had opportunities to establish the central pattern (i.e. the amount of contact with the mother), and on the other hand on the range of people other than the mother with whom he has come in contact (i.e. the diversity of his social relationships). As to the first of these propositions, we shall offer some descriptive material designed to illustrate the natural history of the infant's response to strangers and to indicate the manner in which fear first manifests itself. As to the second proposition, various writers have expressed opinions on this matter; Freedman (1961), for instance, regards the relative exclusiveness or intensity of the mother-infant relationship as a crucial variable, so that infants with intense relationships exhibit fear of strangers earlier than the average. Freedman has also indicated his belief that in large families, where the mother attends the infant minimally and where a number of people come and go, fear is rather less likely to be manifested, and similarly Hunt (1960) has suggested that fear of strangers does not occur in children who have always been exposed to a large number of persons, and that multiple mothering acts therefore as an inoculation against social shyness or fear. We shall therefore examine how far age at onset of the

fear-of-strangers response system is a function of different kinds of social interaction experienced by infants.

METHOD

Subjects

The sample is composed of 36 infants (18 boys and 18 girls) who took part in a short-term longitudinal investigation of early social behaviour (see Schaffer and Emerson, 1964, for further details). The infants were selected from the files of a Maternity and Child Welfare clinic as living at home with their own parents, having been born full-term, showing no evidence of any congenital abnormality, and having had no illnesses or hospitalizations prior to contact. Cattell developmental quotients (Cattell, 1940), obtained at 6 months of age, gave a mean of 112.7 and a range of 92 to 143. The initial contact with the infants was made at a point varying from 6 to 14 weeks of age, and thereafter contacts took place at regular 4-weekly intervals until the end of the first year, after which each child was seen once more at the age of 18 months. All contacts occurred in the family's own home and, for this particular sample, were made by a female investigator.*

Procedure

(a) *The fear-of-strangers measure.* Right at the beginning of every visit, the investigator related to the infant in a series of steps involving progressively greater proximity, as follows:

- (1) The investigator (*E*) appears in the infant's visual range and remains standing still, looking at the infant, but not in any other way stimulating him.
- (2) *E* smiles and talks to the infant without as yet moving any closer.
- (3) *E* approaches the infant, smiling and talking.
- (4) *E* makes physical contact with the infant by taking his hand or stroking his arm.
- (5) *E* offers to pick up the infant by holding out her hands.
- (6) *E* picks up the infant and sits him on her knee.

Age at onset of fear of strangers was defined as the age at which the infant for the first time showed a fear response towards the investigator at some step during the interaction sequence. Fear reactions were specified as whimpering, crying, lip trembling, screwed-up face, looking or turning away, drawing back, running or crawling away, and hiding face. Not included are all instances where the child merely failed to respond positively, e.g. when he stared solemnly without smiling or vocalizing, or when he quietly watched the adult without moving. The procedure was terminated as soon as the infant showed his first fear response. During the procedure the mother stood just by the infant, who thus had ready access to her. As well as noting the particular step in the experimental procedure which elicited the fear response (if any), a detailed observational record was kept of all responses shown by the subject to the investigator throughout the proceedings. In addition, reports were obtained each visit from the mother as to the infant's behaviour towards strangers met with in the course of his everyday life.

How far the use of the same investigator as the "stranger" at each visit affected

*I am most grateful to Mrs. Peggy Emerson for help in the execution of this project.

the obtained results is problematic. The rather sparse evidence available about memory functioning in infancy (Levy, 1960) indicates that this is too poorly developed in the first year to bridge a 4-weekly gap and thus produce a familiarization effect. The nature of the infant's reaction to the first sight of the investigator during each visit certainly did not suggest such an effect, nor does the 92 per cent agreement between the occurrence of fear in the experimental procedure with the mothers' reports about the infants' behaviour to strangers met with in the usual course of his life. Nevertheless, the possibility that a more pronounced fear reaction might have been shown had different adults confronted the infant at each visit cannot be overlooked.

(b) *The social interaction variables.* The following variables were used in order to investigate the extent of the child's opportunities to learn the familiar mother:

- (1) Maternal availability. In order to measure the amount of time which a mother spends with her child, two measures were obtained at the 18-month visit. The mothers were asked to note both the number of times on which they left their infants for more than half an hour during the subsequent seven days and the total time in hours which these absences involved. An extra visit was paid one week later in order to collect this information.
- (2) Maternal responsiveness. The degree of the mother's willingness to respond to the infant's crying and other signals for company and attention was rated on a 6-point scale, ranging from "leaves infant to cry indefinitely, mostly refuses to respond at all", to "always responds quickly, goes almost at once".
- (3) Maternal interaction. This variable refers to the extent to which the mother herself initiates interaction with the infant. The relevant information was again categorized according to a 6-point rating scale which ranged from "mother follows a policy of 'leave well alone', avoids interaction outside routine care situations, tends to ignore infant to a considerable extent" to "fairly continuous stimulation of infant, often of a rather intense form, mother highly demonstrative".
- (4) Number of children in family.

As measures of the child's opportunities to become acquainted with a range of people other than the mother, the following variables were investigated:

- (1) Number of caretakers. This variable refers to the number of people customarily participating in the child's care. Included here were not only those who helped in such physical routines as feeding and bathing but also those who regularly took the infant for walks, played with him, and generally amused him.
- (2) Number of people contacted. At the 18-month visit the mothers were asked to note the number of people with whom the child came into contact during the subsequent seven days, either as visitors to his own house or when visiting other homes.

RESULTS

The mean age at onset of fear of strangers in this sample was 35.94 weeks. This bears out the findings of others, that this phenomenon tends to be manifested first around 8 months of age. Behind this mean figure, however, lies a considerable range

of individual differences, which is expressed in a standard deviation of 8.97 weeks and may be appreciated from the distribution given in Table 1.

TABLE 1. DISTRIBUTION FOR AGE AT ONSET OF FEAR OF STRANGERS

Age in weeks	25-28	29-32	33-36	37-40	41-44	45-48	49-52	Over 53
<i>N</i> (Total = 36)	7	7	11	3	4	2	0	2

There was a tendency for the girls in the group to reach this developmental milestone somewhat earlier than the boys (34.72 weeks and 37.06 weeks respectively), but this difference did not reach statistical significance. On the other hand, the 17 first-born children in the sample were considerably younger at showing fear of strangers than the 19 later born children (32.50 weeks and 39.28 weeks respectively, $t = 2.73$, $P < 0.01$).

The onset of the fear-of-strangers response was often sudden and dramatic. At one contact with the investigator there was no evidence of negative responses; at the next visit the fear response was present in its full intensity. Mothers' reports corroborate this finding, in that they usually pointed to some one particular episode in the course of the child's daily life when quite suddenly he showed fear towards a particular stranger.

However, this apparent suddenness of onset is, in a sense, somewhat misleading. Although negative responses towards the investigator were not in evidence until this point, positive responses towards her did change in the preceding months by gradually diminishing and becoming increasingly difficult to elicit. In the initial weeks of life all infants showed automatic responsiveness, i.e. they smiled almost immediately at the stranger and gave no indication of any awareness of unfamiliarity. At ages varying from 13 to 19 weeks, however, a lag in the smile appeared, and while the mother continued to elicit an immediate positive response from the infant, the stranger was in all cases greeted with a "sobering of the features" (as Gesell and Thompson (1934) refer to it) which only gradually in the course of the contact gave way to more positive responses. Sometimes an ambivalent pattern of behaviour was observed, in that the infant would alternately stare, smile, and then stare again, repeating this a number of times. With increasing age the lag grew longer in duration, until in the month just before the onset of fear a period of complete unresponsiveness occurred in fourteen of the group, when neither fear nor positive responses were observed and the infant remained "frozen" throughout the contact.

A further qualification that must be made in relation to age at onset refers to the reports made by a number of mothers of fear towards other people occurring already in the early months—long before age at onset as defined here. Such early instance of fear have also been reported by other writers (Benjamin, 1963; Morgan, 1965) and have been characterized as referring only to certain exceptional incidents rather than being consistently evoked by all unfamiliar individuals, as well as by being responses to intensity or unexpectedness of stimulation rather than to strangers as such. Thus, in the 13 cases in the present sample where fear responses were reported on at least one occasion before age at onset, it was found that not only strangers but

also familiar persons (e.g. a grandmother, an uncle, and even the mother herself) were involved. The cause appeared to refer to such stimuli as a loud voice, rough handling, and (in the case of the mother who elicited fear) a pair of spectacles not previously worn. As soon as the appearance or behaviour of the individual involved was changed, the fear responses disappeared. They may thus be regarded as isolated occurrences rather than as consistent reactions to encounters with strangers.

It must not be thought, however, that once an infant has reached the age where he is capable of showing fear of strangers, he will inevitably show fearful responses the moment he is confronted by a stranger. A number of observations may be quoted in this respect. For one thing, as may be seen from Table 2, the first step in the

TABLE 2. PROCEDURAL STEP ELICITING FEAR RESPONSE AT DIFFERENT INTERVALS FOLLOWING ONSET OF FEAR OF STRANGERS

Procedural step*	1		Lunar months from age at onset					
	N†	%	2		3		4	
			N	%	N	%	N	%
1	0	0	1	3	0	0	1	4
2	2	6	2	7	0	0	0	0
3	3	8	4	14	3	12	1	5
4	14	39	3	11	5	19	6	25
5	0	0	3	11	2	8	2	8
6	17	47	5	18	4	15	2	8
No fear	—	—	10	36	12	46	12	50
Total	36	100	28	100	26	100	24	100

*See above under Method for a description of the various steps comprising the fear-of-stranger procedure.

†The number of subjects at each age period varies (a) because the number of fear-of-strangers scores obtained by an infant in the course of the first year depends on his age at onset, (b) because of the non-availability of some infants on account of illness, absence from home, etc.

experimental procedure (the confrontation of the infant with the silent and inactive adult) hardly ever elicited fear in the initial months following onset. Contrary to what one might expect, the sight of an immobile stranger looking at the infant without smiling or speaking did not appear to be a fear-provoking stimulus situation. It was rather the active impinging of the stranger on the infant, particularly through physical interaction, that elicited the fear response. Thus the very type of stimulation which, when it emanates from familiar individuals, will give rise to positive social responses, resulted in proximity avoidance when offered by unfamiliar individuals. Moreover, it was repeatedly observed that, even when the stranger began to approach the infant, the latter would not immediately withdraw or cry at this point but would first several times look to and fro between the stranger and the mother—as though comparing one with the other. In four instances the infant, after such initial comparison, visually fixated the mother and continued to stare at her despite the investigator's attempts to attract the child's attention—as though, one might interpret, to preserve the familiar and thereby avoid the unfamiliar sight. Finally,

it is interesting to note from Table 2 the considerable proportion of infants who, following the onset of this phenomenon, did not in subsequent months show any fear whatever in the course of the whole experimental procedure. This applies to between 30 and 50 per cent of the subjects observed at any given point and supports the observation also made by Morgan (1965) that fear is far from being an inevitable response to strangers. In three cases fear appeared to a marked degree in the course of one contact with the investigator at around 8 months of age, but was never observed again on any subsequent occasion. In most other cases inexplicable variations took place from month to month, in that the infant would sometimes show fear and sometimes not. Maternal reports confirmed such fluctuations without being able to throw any light on their causes.

Turning to the relation between age at onset and the variables defining the infant's social interaction experiences, we find from Table 3 that only two of the relationships examined are of significance. Number of children in family is one of

TABLE 3. RELATIONSHIP BETWEEN AGE AT ONSET OF
FEAR OF STRANGERS AND SOCIAL INTERACTION VARIABLES
($N = 36$)

Maternal availability—	r	$= -0.04$
Number of absences	r	$= -0.14$
Hours of absence	r_{bis}	$= 0.16$
Maternal responsiveness	r_{bis}	$= 0.02$
Maternal interaction	C	$= 0.41^*$
Number of children in family	r	$= 0.07$
Number of caretakers	r	$= 0.35^\dagger$
Number of people contacted		

*Significant at 1 per cent level.

†Significant at 5 per cent level.

these, indicating that the more siblings a child had the later he was in reaching age at onset. This appears at first sight to bear out the above quoted suggestion by Freedman (1961), that infants who have to share the mother with other children will be less likely to manifest fear. Yet when one examines directly the variables which would presumably be responsible for this difference, i.e. those which define the intensity of the relationship with the mother, no supporting evidence can be found. In fact, none of the indices used to describe the amount and kind of contact with the mother, and therefore the extent of the child's opportunities to learn her, showed any relation to age at onset. On the other hand, the diversity of the child's social experiences did show some relationship to age at onset, indicating that the greater the number of people that were normally encountered by the infant in the course of his daily life the later he tended to develop fear of strangers.

DISCUSSION

It is to the credit of the incongruity hypothesis that the onset of fear of strangers is not treated as a "magical" event, i.e. one solely due to maturational processes

which defy further explanation, but that it stipulates the conditions which lead up to the emergence of fear in terms which permit empirical enquiry. These conditions refer to the infant's perceptual experiences in social situations and are based on the ability to distinguish familiar from unfamiliar individuals. That such distinction develops in the months preceding the onset of fear, that it gradually builds up from a slight lag in smiling at the stranger to a complete failure to evince any positive responses at all, and that, when fear eventually emerges, it is frequently manifested in such a way as to indicate the infant's perception of the stranger in terms of his distinction from the familiar person—these findings obtained within the present longitudinal context are in accord with the view advanced by the incongruity hypothesis that the development of fear is dependent on the ability to perceive the stranger as "different".

There are, however, three respects in which the hypothesis appears in need of emendation. In the first place, writers concerned with the development of fear in animals (e.g. Scott, 1962; Moltz, 1965) appear to regard the ability to differentiate perceptually between known and unknown stimulus patterns as the only condition required for such a development to take place. Moltz (1965), for instance, believes that what is necessary for the appearance of fear of strange, though innocuous visual stimuli, is "commerce with a structured sensory environment—commerce in which the very fact of exposure seems sufficient to establish the visually familiar ... Once early contact delimits the perceptually typical, presentation of an incongruous stimulus combination is all that is necessary to evoke an emotional response" (p. 39). The adequacy of this statement must, however, be questioned. It is the advantage of human development that it affords the opportunity of observing processes in comparative slow-motion, and we are thus made conscious of the fact that the human infant shows signs of being able to differentiate between known and unknown persons as early as three or four months of age, yet does not show fear until several months later. An unexplained age gap exists, when the stranger is experienced as different, yet not as frightening. It must be concluded that the ability to make the distinction is a necessary but not a sufficient condition, and that the incongruity hypothesis is therefore in need of extension in this respect.

As has been pointed out elsewhere (Schaffer, 1963), an analogous situation is to be found in the development of attachment behaviour. Here too, the ability to establish attachments to specific individuals first occurs at a point several months subsequent to the appearance of differential recognition, thus necessitating the stipulation of a further condition for this development to take place. This, it has been suggested, is to be found in the change in cognitive structure which takes place in the second half of the first year and which results in the establishment of the object concept. As Piaget (1955) has pointed out in considerable detail, an infant of this age will no longer apprehend the world in terms of fleeting images unrelated to one another and only responded to on the basis of their functional properties, but will now begin to organize his perceptions around permanent objects with an independent existence in time and space. Whereas in the earlier stage the infant is said to experience only a series of images which may be recognized, but which have no continuity or substance, in the second six months of life objects become divorced from the subject's immediate perception of them, and from his own ongoing activities.

One result of such a change is that the child now becomes capable of forming permanent relationships to others: in the early months attachments assumed an indiscriminate form in that the proximity of anyone prepared to supply attention and stimulation was sought, while from six or seven months on proximity seeking is confined to certain specific individuals who are not only recognized but actively sought in their own right. The child, in brief, has become object-oriented rather than stimulus-oriented.

It is suggested that the development of fear follows a similar course. Here, too, initially it is certain stimulus properties, such as intensity, suddenness, and unexpectedness that evoke fearful behaviour. Morgan (1965), for instance, found evidence of fear of other people in 40 of his 80 subjects before the age of seven months, but concluded that these involved relatively isolated incidents which were the result of loud talking or sudden movements rather than the newness of the person. Indeed, as in the present sample, several of the mothers reported negative reactions towards themselves and their husbands under such conditions. Similarly Benjamin (1963) has concluded that "there can be a fearful or anxious response to a stranger at an early age that has nothing to do with his human attributes as such, but rather with his belonging to a subclass of the general class of strange things", and that this is dependent on such factors as suddenness and speed of movement and noises. In so far as the infant will respond with fearful behaviour to certain stimulus situations irrespective of whether these involve familiar or unfamiliar individuals, one may regard this early phase as socially indiscriminate in nature. Certain minimal signs, such as differential lag in smiling, indicate an ability to distinguish known from unknown persons, but the dramatic bifurcation into positive and negative social responses cannot take place until other people are no longer responded to on the basis of isolated stimulus characteristics but are instead conceived *in toto*. Only at this point will the infant's social responses be determined by the perceived identity of the other person, and only then can he be said to have the ability to compare one individual with another in terms, for instance, of familiarity. Thus fear responses in relation to the unexpected can already be found in the early months of life, but it is not until the second half of the first year that such responses become linked to a particular class of person rather than to certain more primitive stimulus events. The establishment of the object concept is therefore a precondition to the onset of fear of strangers over and above the appearance of differential recognition. Only when this additional condition has been met can the indiscriminate phase of fearful behaviour give way to a specific phase in which responses are based on the identity of the particular person and no longer merely on certain aspects of his behaviour or appearance.

A further modification of the incongruity hypothesis arises from the finding that, in the early months following age at onset, fear was rarely evoked by the mere sight of the stranger. Simply to be confronted by a stationary, immobile adult, who did not in any way interact with the infant except by visual regard, did not appear to be an emotionally provoking event. It was rather the stranger's active impinging on the infant that produced fear and withdrawal responses. There are several possible explanations for this finding that one might consider, e.g. that the crucial factor lay in the distance between adult and child, or that it was the occurrence of movement

that was the essential stimulus—both possibilities that receive some tentative support from studies of fear in animals (Hess, 1958). The role of such factors in the production of fear will have to be determined by future experimentation. In the meantime, however, a further explanation should be considered, namely that a crucial factor in the perception of unfamiliarity lies in the speed and intensity with which the novel stimulation impinges on the infant in relation to the latter's ability to process and adjust to such information. In his statement of the incongruity hypothesis, Hunt (1963) has shown awareness of this additional precondition when he wrote that "not only degree of incongruity but also abruptness or rate at which incoming information appears to demand reorganization of information in the storage will be factors determining the degree of emotional arousal" (p. 67). This may well account for the fact that fear of strange inanimate objects is reported far less frequently, and appears to assume a very much less dramatic character, than fear of strange animate objects—human or animal. With an inanimate object the child can himself regulate the speed and manner of stimulation to which he is exposed, and under these conditions exploration and approach may eventually take place rather than fear and avoidance. Similarly an immobile adult, despite the infant's perception of his unfamiliarity, does not present stimulation of the intensity and temporal complexity provided by the stranger who actively impinges on the infant. In the latter case the manner and amount of stimulation is determined by the adult without reference to the subject's ability to assimilate the information, and is thus far more likely to be experienced as a disruptive force and hence to produce fear. It must be concluded that the perception of strangeness in itself does not necessarily bring about avoidance behaviour, but that the manner of interaction between subject and stranger must also be taken into account.

The third emendation of the incongruity hypothesis arises from the attempt to define the parameters of the social learning process responsible for differential age at onset of fear of strangers, in terms of antecedent social interaction variables. Only two of the variables examined reached significance levels, and even in these cases the coefficients are not very high. It is, of course, possible that the measures used here were not sufficiently sensitive, or that relationship variables other than those examined represent the crucial determinants. However, it is noteworthy that both Dennis (1940) and Ainsworth (1963), in the case of Hopi Indians and the Ganda of East Africa respectively, have found fear of strangers to occur at the usual time despite the prevalence of child rearing practices that in many respects differ appreciably from those adopted in Western countries. Morgan (1965), in his study of a sample of infants in the U.S.A., has also reported insignificant correlations between previous experience variables and parameters of the fear response, and his explanation, that the sample studied by him was too homogeneous to highlight any relationships that do exist, may well apply to the present sample too. That variations in upbringing can influence the timing of early social phenomena is indicated by the failure of deprived infants to develop differential smiling (Ambrose, 1961) or fear of strangers (Spitz, 1946) at the usual time, but it seems likely that these variations must be of a more extreme form than those found here if they are to produce systematic differences in the emergence of distinctive responses to strangers. The possibility must therefore be considered that the individual differences observed in the present sample relate less

to environmental and more to genetically determined factors. Freedman (1965), on the basis of greater concordance found in identical than in fraternal twins, has suggested that heredity plays an important role in the development of fear of strangers, with reference both to the timing and the intensity of the response. To accept his proposition does not, of course, involve an abandoning of the view that the onset of fear can only take place if certain relevant learning experiences have taken place: rather, the position is similar to that discussed elsewhere in relation to age at onset of specific attachments (Schaffer and Emerson, 1964), which also showed little relation to experience variables. In both cases it is likely that the social conditions in the sample studied happen to meet minimal learning requirements, so that the new milestone will be reached at a rate that is primarily determined by the individual's genetic endowment. Under more extreme conditions, on the other hand, such as may be found in institutionalized settings, delay or even complete developmental failure can occur.

However welcome the emphasis of the incongruity hypothesis on the individual's previous perceptual experience may be, it is apparent that the manifestation of fear of strangers is a multi-determined event. The perception of unfamiliarity alone, it appears, is not sufficient to bring about fear: other variables, referring both to organismic and to stimulus characteristics, must also be taken into account.

SUMMARY

According to the incongruity hypothesis put forward by Hebb and by Hunt, fear of strangers is based on the experience of discrepancy between the sensory information provided by an unfamiliar individual and a central pattern corresponding to the familiar person. Data obtained in the course of a longitudinal investigation of human infants in the course of the first eighteen months are used to examine this hypothesis, with particular reference to the extent to which age at onset of fear of strangers may be regarded as a function of previous social encounters. To this end the qualitative nature of the response to strangers and the developmental changes leading up to the manifestation of fear are described, and individual differences in age at onset are related to a number of social interaction variables. The incongruity hypothesis is discussed in the light of these findings.

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PLAY, LANGUAGE AND REASONING IN SUBNORMAL CHILDREN

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I. INTRODUCTION

IN SPITE of the recent increase in interest in the education of severely sub-normal children, we still lack an adequate understanding of the abilities of such children, and it is therefore impossible to estimate their needs with any confidence. In the light of a number of recent researches (Clarke, 1958; O'Connor and Hermelin, 1963; Tizard, 1964), it appears that the potential of the severely sub-normal for learning may well be far greater than has been supposed.

Both in institutions for the feeble-minded and in day centres, traditional ways of caring for the severely sub-normal point to the widespread prevalence of the belief that they lack spontaneity and individuality. Very generally, the social training of these individuals takes the form of a requirement that they assimilate a restricted number of carefully prescribed routines, and expressions of interest which lie outside of these are neither expected nor exploited. Moreover, as the administration of the care of the severely sub-normal is divorced from the educational system, developments in educational methods and in educational thinking are only slowly reflected in their handling.

The Brooklands experiment (Tizard, 1964) was carried out in the belief that even severely sub-normal children would benefit from the freer discipline of family grouping, and its results seem encouraging. In the sphere of language development, significant gains were shown by children who had experienced the modified environment as compared with their controls who had remained in the main body of the institution; nevertheless, this increase in the rate of growth in language skills was not accompanied by a parallel rise in I.Q. on a non-verbal scale (Lyle, 1960). In a complete account of the project, Tizard (1964) describes the very considerable improvements in adjustment that occurred in children in the family-group setting during the course of the 2-year project. However, such changes were not readily quantifiable. Similar improvements were noted in the character of play behaviour, e.g. "At first their play behaviour was simple and unimaginative; later imagination and phantasy began to enter in." (p. 103.) Tizard concludes that while there is no evidence that such an environment will result in a higher ultimate level of development, the improvement in adjustment and verbal skills justified its introduction. It should be remarked that nearly all of the children involved in the Brooklands study were more or less severely disturbed. No attempt has yet been made to compare the

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ability of sub-normal and normal children to initiate fruitful interactions with their environment in a non-directive setting. More specifically, such an ability may be expected to manifest itself in terms of the constructiveness shown in free play (Barker, Dembo and Lewin, 1941; Lunzer, 1955). Moreover, it seemed desirable to carry out such an enquiry with sub-normal children who were not suffering from the additional handicaps of institutionalization and emotional disturbance.

It was therefore decided to undertake a quantitative investigation of the intellectual quality shown in the free-play of severely sub-normal children. Specifically, the hypothesis to be tested was that such children lack the ability to plan and structure their own behaviour. When compared with normal children of similar mental age the elaboration of their activity in an unstructured situation would be less.

At the same time, an opportunity was taken to compare this aspect of development with the level of intellectual functioning in a number of more structured situations. For this purpose, it was decided to investigate the quality of reasoning and the level of language behaviour in a picture interview situation. Reasoning was studied in two ways: the first was an adaptation of one of Piaget and Inhelder's enquiries (1956), while the second was designed as a measure of the child's capacity for storing and processing information.

A number of research workers have stated that at least some aspects of language development in the sub-normal are impaired (Luria, 1961; Luria and Vinogradova, 1959; Karlin and Strazula, 1952; and cf. Thompson and Magaret, 1947). Thus Luria's contention is that their language does not assume a regulatory function; the evidence of Thompson and Magaret is consistent with such an interpretation, and, more recently, O'Connor and Hermelin (1963) have argued that sub-normal children are less ready to use language to code and store information, even when compared with children of similar mental age, although they have also shown that there is exaggeration in Luria and Vinogradova's claim that the language of the sub-normal is dominated by phonic associations.

In a previous publication (Lunzer, 1959), one of the writers argued that the play of young children constitutes an active form of representation, and is therefore a necessary precursor of the use of language in thought, when the "second signalling system" (Pavlov) is too weakly developed to function unaided. It would follow that the cognitive functions of play and language are essentially similar. A further contention was that the interaction of play and language promoted the elaboration of the former, and the development towards independence of the latter. Thus, if it were found that the children examined in the present study were specifically retarded in language but not in play, these interpretations would require some modification.

As to the relation between language and reasoning, Piaget has repeatedly argued that the structurization of thinking is a largely independent process of ontogenesis (e.g. Piaget, 1964, p. 293; 1963, p. 151). Undoubtedly the more common view (e.g. Osgood, 1953; Mowrer, 1960; Skinner, 1957) is that reasoning is closely dependent on language.

II. SUBJECTS

This investigation was carried out in Salford with the support of the Health Department. This authority offers day-time care and training for backward adults

and children from the age of two. The youngest group attend a crèche which comprises a nursery group, a unit for maladjusted and psychotic children, and one for the cerebral palsied. At the age of about seven, the children from the nursery group are transferred to a junior training centre.

About the time of this investigation, one of us was asked to offer advice on the training of children in the nursery group and junior centre. It was agreed to make more provision for free-play with a view to maximizing the opportunities for development towards independence. An effort was made to modify the management of the children to approximate to the pattern which obtains in nursery schools for normal children. Almost from the outset, it was found that the children were able to accommodate to their increased freedom, so that the general impression which they produced was one of activity and enjoyment.

The sub-normal sample consisted of all children in these centres aged between 3 and 12 years, excluding those who were not mobile or were severely disturbed. There were 18 such children. Each had been tested by a qualified psychologist using the Terman-Merrill scale (Form L) less than a year before the present enquiry. The aetiology of sub-normality was inevitably ignored to obtain an adequate sample. Ten of the 18 were mongols, and 4 of the remainder were unclassified.

For administrative reasons it was impossible to obtain a perfectly matched control sample in terms of MA, sex, and socio-economic status. To avoid excessive travelling time, the sample was taken from a single day-nursery not far from the two centres for the sub-normal.* Eighteen children were selected on the following two criteria: CAs were to show a similar range and distribution as the MAs of the sub-normal sample, and no subject was to be included unless he had either a complete family (father and mother living in home with child) or at least an adequate mother or mother-substitute (based on the judgment of the matron in charge). Of the 18 children selected 10 had complete families, 6 lived with their mother (in 5 cases this meant living in the home of the maternal grand-parents), and 2 who had lost their mother were living with their father and paternal grand-parents. All of these subjects were tested during the course of the investigation by one of the writers (IH), again using the Terman-Merrill (Form L).

It will be apparent that the matching for mental age was satisfactory, while differences in chronological age were considerable (Table 1).

Since both samples covered a wide range of mental age, it was decided to group all results so as to form three sub-groups representing successive mental age levels. Each of the resulting sub-groups consisted of 6 children. Their comparability with respect to mental age is apparent from Table 2, and was further attested by analysis of variance.

III. PROCEDURE

Play

Individual children were observed in rotation for a total period of one hour per child. The aim was to approximate to a standard observation period of fifteen

*The use of a nursery school (under the Local Education Authority) would have obviated the danger of selecting children with inadequate home support, but such schools do not accept children under 3 years of age.

TABLE 1. A COMPARISON OF THE SEVERELY SUB-NORMAL AND CONTROL SAMPLES

		Sub-normal	Normal
Boys		11	10
Girls		7	8
Total		18	18
CA	Mean	7; 5	3; 4
	Range	3; 5-11; 5	1; 11-4; 7
	s.d.	2; 9	0; 10
MA	Mean	3; 3	3; 5
	Range	1; 9-6; 0	1; 9-5; 5
	s.d.	1; 4	1; 0
I.Q.	Mean	45	99
	Range	25-60	81-117
	s.d.	10.8	11.3

TABLE 2. MENTAL AGES OF THREE SUB-GROUPS FOR NORMAL AND SUB-NORMAL SAMPLES

		Normal	Sub-normal
Youngest sub-groups	Mean	2; 3	2; 0
	Range	1; 9-2; 10	1; 9-2; 2
	s.d.	0.49	0.18
Intermediate sub-groups	Mean	3; 5	3; 0
	Range	2; 11-3; 10	2; 6-3; 6
	s.d.	0.37	0.36
Eldest sub-groups	Mean	4; 6	4; 10
	Range	3; 11-5; 5	3; 6-6; 0
	s.d.	0.58	1.01
Total samples	Mean	3.40	3.26
	s.d.	1.05	1.33

Analysis of variance				
	df.	Mean square	F	P
Between groups	2	19.268	61.17	<0.001
Between samples	1	0.167	<1	
Groups \times samples	2	0.359	1.14	(N.S.)
Within groups	30	0.315		

minutes. This period was chosen so as to allow of adequate recording of relatively prolonged episodes of integrated activity, when these occurred. In some cases, an observation had to be terminated before this time had elapsed, and in such cases the total number of observations of the subject was increased beyond four, to ensure the

minimum total of an hour. For all children, the total record of observations ranged over at least four separate days, and in some cases five, six, or seven.

All observations were carried out in the child's own centre or nursery during morning periods of free-play activity. So far as possible, the observer remained inconspicuous and made no attempt to interfere with the spontaneous activity of the child under observation, or with his interactions with other children. Children played either in play rooms or in the yard. The materials available to them in all three establishments were quite comparable, and included such standard nursery school equipment as sand, water, paints, doll-play material, tricycles, toy vehicles, constructional toys, jig-saws, picture books, etc. Full details may be found in Hulme (1965).

An extended diary method was used throughout. In addition, whenever possible all language used by the children under observation, or addressed to them, was recorded verbatim. Records were evaluated by means of the scale of organization of play behaviour constructed by Lunzer (1955). This scale (see Appendix) provides a 9-point index of the intellectual elaboration in young children's play; separate scores being given for each psychological unit of behaviour. In the present study, the final score awarded to each subject was the mean of the highest scores achieved in each successive ten-minute period of the total hour's observations.

Lunzer (1955) found the combined 9-point scale yielded a satisfactory reliability in terms of the agreement between independent judges. One hundred and fifty-nine behaviour records were separately assessed by 2 judges: there was perfect agreement on 64% of these and for 31% the judges disagreed by a margin of 1 point only. In no case did the disagreement exceed 2 points. For the present enquiry, a sample of 220 records of play sequences was rated independently by 2 judges. A number of auxiliary scales were first drawn up based on those shown in the appendix, but providing instance of each category for every type of material considered. The use of these scales resulted in perfect agreement between the 2 judges.

Language

Two individual interviews were held with each child, during the course of which he was presented with ten pictures, five of which depicted everyday objects (e.g., a pair of shoes, a staircase, a bus) while the others showed familiar scenes (e.g. children playing in sand, shopping with mother, etc.). These pictures were shown to the child one at a time, and he was asked to "Tell me about this one!" "Tell me all about it", etc.

Two measures were taken. The first, a measure of loquacity, was the total number of words uttered in response to each picture, not excluding words which were unintelligible. The second was a measure of response level; this was evaluated on a five-point scale based on the work of Watts (1944), Binet (Terman-Merrill, 1937), McCarthy (1943) and Vernon (1940).

The five grades adopted were:

0. Refusal.
1. Naming. Not more than two items.
2. Compound naming: more than two items named, *or* use of an adjective with a noun, *or* description of relation (e.g. "The duck is in the water").

3. Description of the visual content of the picture or a part of it involving a verb other than *is* or *has*.
4. Association: reference to a content not featured in the picture, whether real (e.g. "Mummy bought shoes in a shop") or imaginary (e.g. "Once upon a time a little girl had red shoes on . . . and she went to a castle . . .").*

Often two or three neutral additional questions were added to elicit more language from children who did not respond immediately: e.g. "Tell me more", "Anything else?" However, records for spontaneous utterances and elicited utterances were evaluated separately, both for loquacity and for level of response, as the wording of supplementary questions was liable to influence the quality of response.

Reasoning

The first situation was based on Piaget and Inhelder's (1956) investigation of development in the reproduction of linear and circular order. Previous workers have shown that sub-normal children show a similar developmental pattern to the normal child in regard to the acquisition of systematic structures of reasoning (Woodward, 1959, 1962; Lovell, Mitchell and Everett, 1962). However, all are agreed that development is slower in such children, and Inhelder (1963), who pioneered this field of study, argued that the degree of subnormality determines the eventual ceiling in such systematization.

The reproduction of an ordered arrangement was chosen as a task which might be expected to discriminate within the mental age range of our subjects. Successive levels in the solution of this problem are clearly dependent on the gradual emergence of an operational systematization in the child's handling of experience. At the same time, previous research (Piaget and Inhelder, 1956; Lovell, 1959) has demonstrated the existence of clear-cut partial achievements which are realized well before the age of concrete operations proper (6-8 years). Following Lovell, only 5 elements were used instead of 7 or 8, in order to keep the tasks within the capacity of children in the mental age range of 3-5 years.

The following procedure was adopted. The subject is shown a necklace made up of 5 variously coloured beads. He is required to copy the model under a variety of conditions, by making appropriate choices from a set of 8 beads (i.e. 5 relevant and 3 irrelevant) and threading them. The easiest of these was to allow him to construct his copy directly opposite the model. The most difficult task attempted by our subjects was to reverse the order of the elements in the model, the copy being laterally displaced.

The tasks were always given in the following sequence: copy of direct order with copy facing model, copy of direct order displaced, reversal of direct order, copy of circular order (bead material only, first with elements close together, then with elements spaced).

Before beginning the first task, the child was asked to find all the required articles and match each against the model before starting his copy (see Piaget and Inhelder, 1956). In addition, children were allowed to touch the items on the model while choosing the items for their copy.

*It was originally intended to discriminate between realistic asides and imaginative interpretations. In practice, however, the distinction was found impossible to make with any certainty.

TABLE 3. SCORING PROCEDURE FOR REPRODUCTION OF LINEAR AND CIRCULAR ORDER

Score	
Direct order: model facing copy	
0	No correspondence between copy and model.
1	All elements correct, but sequence of elements ignored.
2	One or more correct juxtapositions.
3	Partial success (4/5 elements).
4	Complete success.
Direct order: copy displaced: and linear reproduction of circular model	
5	Partial success (4/5 elements) on either task (direct displaced or linear copy of ring, after complete success with linear order when model faces copy).
6	Complete success with copy of displaced linear arrangement.
7	Success in copy of necklace with beads in close proximity.
8	Partial success with necklace (beads spaced).
9	Complete success with spaced necklace.
10	Partial success with reversal (centre bead and at least one other).
11	Successful reversal of linear order.
12	Reversal without need for preliminary pointing and touching.

It should be observed that the present writers, like Woodward (1962), found that there was distinct progression in the order of difficulty of these tasks. Thus, a subject who could copy a displaced model with only one error (awarded a score of 5) had invariably made a perfect copy when the model and copy were in line of regard. Similarly, even partial success with spaced beads in circular order was never achieved, unless the subject had also proved successful with the reproduction of displaced linear order and the tightly packed necklace.

The second situation was designed as a tentative measure of the child's capacity to store and retrieve varying amounts of information presented in a visuo-motor task. The material consists of small bricks of four different colours and in five sizes based on a unit cube with a 1.8 cm edge. Thus longer bricks are 1.8 cm in cross-section but are two, three and four times longer, while flat bricks are just half the height of the cube. This material lends itself readily to the construction of models of varying complexity. The items of the test all take the same form. The experimenter makes a model of not more than four bricks and the subject attempts to copy it.

Items were divided into groups, each consisting of some 10-12 items. The elements available to the child were presented in random array in a tray, the contents of which were constant for any one series, but differed from one series to another. Following are examples first of the easiest items, then of the most difficult ones attempted by these subjects:

Series 1

Tray contains 16 cubes, 4 of each colour (red, yellow, green, blue).

Item 1. GG

(2 green cubes.)

Item 7. GYB

Item 10. GYGY (to be reproduced from memory).

Series 4

Tray contains 32 elements, the cubes of previous tray, and the corresponding flat cuboids (with height half the side of the square base).

- Item 1. BBB $\frac{1}{2}$ 1 $\frac{1}{2}$ (i.e. blue cube, blue flat, blue cube), model in view.
 Item 3. BYR $\frac{1}{2}$ 1 $\frac{1}{2}$ (model screened).
 Item 9. GRG 1 $\frac{1}{2}$ $\frac{1}{2}$ (model screened).

Some copies may be made with the model visible, while in the case of other items the copy must be constructed from memory. In these cases a screen is interposed between the child and the model; when the child offers his construction the screen is removed for him to see the model and adjust his copy if it is faulty. Scoring was based on the ability of the subject to produce a correct copy in accordance with the requirements of the item, one point of score being awarded for each correct solution. In addition, note was taken of his ability to correct an incorrect copy after removal of the screen. Four attempts were allowed for each item, yielding a maximum score of 4 per item. (For full details see Hulme, 1965.)

IV. RESULTS

(a) Play

Table 4 summarizes the scores attained by the 36 subjects, each score representing the mean of the highest level of organization in a ten-minute period (that is, a mean of six ratings).

TABLE 4. HIGHEST RATING IN TEN-MINUTE PERIODS OF PLAY

		Nursery children	Sub-normal children
Youngest sub-groups	Mean s.d.	5.68 0.84	5.37 0.83
Intermediate sub-groups	Mean s.d.	6.68 0.63	6.17 0.52
Eldest sub-groups	Mean s.d.	7.60 0.95	7.53 1.13
Total samples	Mean s.d.	6.66 1.12	6.36 1.23
Analysis of variance			
	df.	Mean square	F
Between MA groups	2	12.564	17.9 ($P < 0.01$)
Between samples	1	0.810	1.16 (N.S.)
Interaction	2	0.152	<1
Within groups	30	0.709	

No significant differences were found between the levels of organization appearing in the play of normal and sub-normal children. In both samples increase in mental age made a considerable contribution to the variance.

A number of authorities have maintained that sub-normal children are less able to structure their own environment (Strauss and Lehtinen, 1947; Horne and Phileo, 1942; Clarke and Cookson, 1962). Performance may therefore be impaired when the situation is relatively unstructured. Accordingly, it was decided to make a separate evaluation of the level of play when creative materials were used (paint, clay, bricks, construction sets, etc.). The hypothesis was not confirmed, and differences were

again minimal, the mean score of the sub-normals being 5.814 while that of the normals was 5.806.

(b) *Language*

Significant differences were found both in loquacity and in the quality of language, as is apparent from the data in Table 5, based on results yielded before supplementary questioning. The overall mean length of utterance was 198 words for the normal group and 46 for the sub-normal.

TABLE 5. MEAN LENGTH AND LEVEL OF RESPONSE TO TEN PICTURES

TABLE 5. MEAN LENGTH AND LEVEL

	Normal children		Sub-normal children		
	Length	Level	Length	Level	
Youngest sub-groups					
Mean	67.5	1.8	14.2	0.6	
Range	14-110	0.9-2.4	0-31	0-1.2	
s.d.	41.1	0.6	11.7	0.5	
Intermediate sub-groups					
Mean	130.0	2.5	35.8	1.3	
Range	55-229	1.3-3.3	14-61	1.0-1.8	
s.d.	358.8	0.7	39.2	0.3	
Eldest sub-groups					
Mean	395.3	3.4	89.0	2.2	
Range	45-1078+	1.6-4.0	23-139	0.9-3.0	
s.d.	—	—	—	—	
Total samples					
Mean	197.6	2.54	46.3	1.35	
s.d.	246.9	0.95	40.1	0.85	
	Analysis of variance				
	df.	Mean square for length	F	Mean square for level	F
Between MA groups	2	135,333	5.7 ($P < 0.02$)	7.31	16.9 ($P < 0.01$)
Between samples	1	205,965	9.05 ($P < 0.01$)	12.84	29.9 ($P < 0.01$)
Interaction	2	55,346	2.5 (N.S.)	0.002	—
Within groups	20	22,735	—	0.43	—

The youngest group of sub-normal children were barely verbal. Of a total of 60 responses called for (10 pictures for 6 subjects), no less than 23 were cases of refusal (score of 0), and a further 11 gave unintelligible utterances. Only 2 refusals were found among the normal subjects, both from the same child. While older and less retarded sub-normal subjects show an improvement both in loquacity and in level of response, the relative retardation remains virtually unchanged (the interaction variance is not significant for loquacity, and negligible for level).

The separate record of response elicited by further questioning shows slight increases in loquacity and in level for all groups with the exception of the youngest sub-normals (Table 6). However, the increase for the oldest group of sub-normals is

extremely marked. At least in this situation, it appears that sub-normal children do not spontaneously make the fullest use of their capacity for language.

TABLE 6. MEAN INCREASE IN LANGUAGE AFTER SUPPLEMENTARY QUESTIONING

	Normals		Sub-normals	
	Loquacity	Level	Loquacity	Level
Youngest sub-groups	+ 40 (9.9%)	+ 0.06	+ 2 (0.5%)	+ 0
Intermediate sub-groups	+ 33 (4.2%)	+ 0.17	+ 23 (10.7%)	+ 0.10
Oldest sub-groups	+ 58 (2%)	+ 1.18	+ 206 (36.7%)	+ 0.65

Because this part of the enquiry was relatively uncontrolled, no test of significance can show the generality of these findings. (Those who gave the fullest initial responses were asked fewer questions, etc.) Nevertheless, the present figures suggest a possible area for closer study.

Finally, it was noticed that the responses of the sub-normal children were marked by an almost complete absence of fanciful statements (including playful associations and play on word sounds). Nevertheless, a number of utterances of this sort did occur in the course of free play.

(c) *Reasoning*

TABLE 7. REPRODUCTION OF LINEAR AND CIRCULAR ORDER (BEADS)

		Normal	Sub-normal
Youngest sub-groups	Mean	1.0	0
	s.d.	1.7	0
	Range	0-4	—
Intermediate sub-groups	Mean	1.8	1.7
	s.d.	2.9	1.9
	Range	0-6	0-4
Eldest sub-groups	Mean	5.2	7.3
	s.d.	3.8	4.4
	Range	0-9	0-11
Total samples	Mean	2.7	3.0
	s.d.	3.3	4.1

With only two exceptions, the two youngest sub-groups failed to co-operate on either test, and were therefore awarded a score of zero (Tables 7 and 8). Even among the remaining subjects, performance was very variable, as is apparent from the size of the sd's in relation to the means shown in these tables. Accordingly, differences between the samples of twelve were tested for significance with the non-parametric Mann-Whitney U test (Siegel, 1956).

It is clear that in the test based on Piaget, the sub-normal sample fared as well

TABLE 8. REPRODUCTION OF BRICK MODELS

		Normal	Sub-normal
Youngest sub-groups	Mean	14.8	0
	s.d.	24.5	0
	Range	0-58	—
Intermediate sub-groups	Mean	78.8	24.0
	s.d.	41.1	20.3
	Range	0-115	0-51
Eldest sub-groups	Mean	111.8	83.0
	s.d.	59.1	44.9
	Range	0-145	16-122
Total samples	Mean	68.5	35.7
	s.d.	58.6	44.7

as the control group, and indeed their mean score is higher (P : N.S.).* Conversely, it appears that sub-normal children did not perform as well in the second experimental situation, which was designed as a test of the capacity for coding and storage ($P < 0.025$).

Whereas the scores of the sub-normal sample tended to be lower for all items of this test, the difference was particularly noticeable for items which required the reproduction of a structure from memory: altogether the normal group produced 475 copies, while the sub-normals achieved only 201. Moreover, when the screen was removed and the subject was required to correct his errors, sub-normal children were far less able to do so than their controls.

TABLE 9. REPRODUCTION OF MODELS: CORRECTION OF ERRORS

	Normals	Sub-normals
Removal of error	142	90
Failure	31	91
$\chi^2 = 41.0$ ($P < 0.001$)		

V. DISCUSSION

Summarizing the results of the last section, the principal findings of this enquiry were:

(1) No differences were found in the level of organization shown in the free play of sub-normal children as compared with a control group of comparable mental age.

(2) The sub-normal group were inferior both in loquacity and in the quality of their language responses. At the same time, it appeared that the older sub-normal children in particular were capable of a more advanced handling of language than that which they produced spontaneously.

*The results of a parallel set of tasks, using dolls' clothes on a washing line instead of beads, were essentially similar (see Hulme, 1965).

(3) No differences were found in the systematization of relations of spatial order, but the sub-normal group were inferior in a task which had been designed as a measure of the capacity for storage and retention.

The number of subjects is small, and within each area of the enquiry the soundings we have taken are narrow. Hence none of these findings can be regarded as secure and their interpretation is necessarily tentative.

Bearing this restriction in mind, the most interesting outcome of the investigation is undoubtedly that the sub-normal group did not show a specific retardation in their ability to cope with an unstructured free-play situation.

Tizard (1964) reported a qualitative improvement in the play of severely disturbed, institutionalized sub-normal children over a two-year period. The present study shows that in terms of a quantitative measure, the play of non-institutionalized and relatively well adjusted sub-normal children is not easily distinguishable from that of normal children of comparable mental age. Moreover, these subjects adjusted to a free environment even though it had only recently been introduced in their centres. However, the fact that the two groups were matched for mental age also implies that the sub-normal subjects were very much older than their controls. It follows that the constructive and imaginative uses to which the material was put might be attributable to their routinization in the course of years of similar activity and relevant observation. Hence, one cannot conclude with any certainty that sub-normal children have as much initiative as normal children of similar mental age.

The issue here must remain undecided. A fruitful line of enquiry would be to carry out comparable observations over a longer period. Thus one would seek to test the hypothesis that sub-normal children are more content to repeat familiar routines with the different materials available, while normal children of similar mental age would be more apt to vary their use of materials (compare with Lewin's satiation hypothesis, Kounin, 1941).

The finding that sub-normal children have less command of language than their controls is consistent with most of the studies mentioned above. Perhaps the most interesting feature of our results in this area is the greater discrepancy between spontaneous and elicited language. The failure of sub-normal children to use language spontaneously provides some support for the contention of Luria (1961) that language is not used by sub-normal children in the regulation of their behaviour. The fact that language can be elicited may indicate that training will assist the subnormal child to partly overcome this handicap. But this is by no means certain. For the essence of Luria's argument is that in the normal subject the physiological networks which govern language become closely connected with those that direct behaviour, and assume a dominant hierarchical role in relation to these, while in the sub-normal the two systems remain independent, so that speech itself is no more than one of several equipotent response alternatives. Training the subject to favour this alternative may not affect the character of its relation to other functions.

The test of the ability to reproduce models was designed as a measure of the capacity for encoding and storage. Since these are two of the principal functions of language, the results are not unexpected. However, they need to be viewed with some caution. Both the apparatus and the procedure were exploratory. Further work being pursued at present suggests that practice effects are considerable, and it is possible

that failure to control such experience can outweigh any effects due to genuine differences in the processes which we wish to study.

No differences were found in the test of the systematization of order relations. It has already been mentioned that Piaget himself contends that the growth of the operational structures of intelligence is a largely independent process of equilibration. Insofar as the task investigated here represents an early stage in the evolution of such a structure, the results support Piaget's thesis. On the other hand, the concept of equilibration itself has been criticized by Bruner (1959) on the ground that, because it is ill-defined, it can be made to account for almost anything—without advancing our understanding. Any attempts to lend a greater precision to this concept must refer to what Piaget calls the growing mobility of internalized actions, that is the tendency for previously independent processes to become associated with one another, so that they are first co-ordinated and eventually fused within a systematic structure (Piaget, 1957; Inhelder and Piaget, 1964, chapter 7 and Conclusions). Now whereas this process of interpenetration may well be relatively independent of language *qua* acquisition of speech, it can hardly be separated from the development of language as a symbolic function, that is from language *qua* representation. Yet it is precisely this function of language which is deficient in the sub-normal according to Luria.

Once again, our limited findings cannot resolve the issue. The technique of equating mental ages, although it has heuristic value, can also lead to confusion (Birch and Lefford, 1963). For mental age is not an absolute standard of reference, but an index of averaged abilities in several areas. The relative success of our sub-normal group in the Piagetian task may be bound up with the limited degree of systematization required by our test of ordering. There is some evidence that even higher grade children do not achieve a degree of systematization consonant with their mental age when the systematization required is more searching. Thus Jackson (1955) found that logical reasoning in children with I.Q.s of 60–80 tended to reach its ceiling about the age of 9, and at a mean performance level characteristic of average children aged 7.

Finally, a word must be said about the role of language in the organization of play. One of us (E.A.L.) had anticipated a closer interdependence than appears in these results. Again, it may be that the greater age and experience of the sub-normal children will partly account for the adequacy of their behaviour in the free-play situation. Almost certainly, however, the rather global way in which we have spoken of the regulative functions of language requires a finer analysis. And this cannot be undertaken without further research.

SUMMARY

Eighteen sub-normal children in day training centres were studied together with eighteen normal children of comparable mental age attending a day nursery. Comparisons were made in respect of measures of organization of behaviour in free-play, verbal responses to a picture interview, degree of systematization of relations of spatial order (Piaget), and reproduction of models built out of bricks of different shapes and colours. The last of these was designed as a measure of the capacity for encoding and storage.

No significant differences were found in the elaboration of play behaviour or in the test of order. On the other hand, considerable differences were found both in the level of language responses and in their amount. Sub-normal children were also less well able to reproduce models correctly, particularly when the reproduction had to be made from memory, and they were less able to correct errors once they had been made.

All of these findings are discussed with particular reference to the role of language in the organization of the various kinds of behaviour that were studied.

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APPENDIX

A Scale of Organization of Behaviour for Use in the Study of Play in Young Children

E. A. LUNZER

The scale is based on the observations carried out by Lunzer (1955). Each behaviour unit is rated on each of the two sub-scales, *adaptiveness in the use of materials* and *integration of behaviour* in accordance with the criteria shown below. These criteria were arrived after examination of some 1500 behavioural records of play involving different materials. Although the two sub-scales differ in conception, in practice they represent a unitary quality of behaviour (at the phenomenal level). It will be seen that a given score (1-5) on the integration sub-scale pre-supposes at least an equivalent score on the adaptiveness sub-scale, though the reverse is not the case. The overall scale yielded a reliability of 0.91 over the age-range 2-6 (*op. cit.*).

Assessment of units in the behavioural records are always made in terms of the two sub-scales and there are no separate criteria for the total scale. The criteria for the two sub-scales are therefore reproduced below. To illustrate their combined use in the 9-point total scale, these are followed by extracts of behaviour with a single type of material (doll's tea set) to typify each of the 9 levels and the way they are determined.

(a) *Adaptiveness in the use of materials*

The interest here lies

- (a) in the degree to which the child uses the material in an appropriate manner, having regard to its properties and potentialities rather than indiscriminately;
- (b) in the extent to which the child does not confine himself to the obvious treatment suggested by the material itself, but adapts it to conform with his own constructive or imaginative purpose.

Each unit is graded on a scale of 1-5 as follows:

1. The material is used without regard to its physical or representational properties in a manner recalling the play of infants.
e.g. Examines the material superficially.
Picks up a toy and bangs it on the ground or on own body.
Stirs the sand with his finger.
2. The material is used with some regard for its properties, but these are not exploited to the full.
There is an element of lack of vision in the handling.
e.g. Shovels or rakes at the sand without making anything.
Clicks a toy pistol in an aimless kind of way.

Hammers a brick without inserting a nail.

Daubs paint on paper or wood.

3. The material is used with regard to its properties, but in an obvious way. There is no coherent play theme which transcends the given materials and within which their appropriate use figures as meaningful behaviour.

e.g. Fills the bucket, or makes a sand-pie without naming it.

Paints waste wood with the intention of colouring it, but without any further imaginative or constructive intent.

Puts the doll to bed in the cot provided, without extending the imaginative theme to other aspects of the domestic situation.

Hammers a nail in wood.

4. The material is used in a manner transcending its merely obvious properties.

e.g. Builds an elaborate block structure.

Makes a recognizable human figure of plasticine.

Makes or attempts to make a sword or an aeroplane of waste wood.

Or The material is used appropriately within the meaningful context of a larger imaginative whole.

e.g. Uses the dolly tea-set in the context of a fairly well organized tea-party.

Plays with the sand, giving a representation of a fish and chip shop.

5. The material is used in a highly insightful manner, adapted to a context which clearly transcends it.

e.g. Builds a "ship" on the sand-trays, inverting a table on it and wedging this with blankets, using the clothes horse as a ship's ladder, and so on.

Plays at a "tea-party" using sand as a birthday-cake, which he decorates, perhaps using small pieces of wood as candles, or perhaps wrapping small bits of plasticine in paper to make toffees and so on.

(b) *Integration of behaviour*

This is a measure of the complexity of the given behaviour. Since each unit constitutes, as far as can be estimated, a psychological whole, such a unit can be simple, as when the child does some one thing, unrelated to the rest of his behaviour; or it can be complex, as when he engages on an elaborate project. This classification approximates closely to that of "constructiveness" as defined by Barker, Dembo and Lewin (1941).

Each unit is graded on a scale of 1-5 as follows:

1. There is little or no integration. The subject seems to behave incoherently and achieves nothing definite.

e.g. Rakes or shovels at the sand aimlessly.

Moves a vehicle to and fro.

2. There is integration at the level of routine behaviour. The child performs some simple task.

e.g. Loads bricks on a vehicle.

Fills a bucket with sand.

Tries to hammer a nail in a brick.

3. A number of separate behaviours are integrated within the framework of a coherent task of some complexity.

e.g. Puts a doll in the cot and covers it over with blankets.

Makes a sand-pie.

Paints a vehicle carefully inside and out.

4. There is integration of a high order. Several complex tasks are drawn together round a central theme, in a somewhat disjointed way.

e.g. Engages in domestic play, involving putting the children to bed, ironing clothes, and so on. Plays skittles with another child, involving taking turns, knocking the skittles down and setting them up again.

5. Well-knit and structured activity centring around a complex project which demands that the various sub-activities be carried out in a coherent sequence.

e.g. Empties all the sand toys from the sand-tray and constructs a deck on it, using a table (to represent a ship); then fits it with a ships' ladder, and so on, and plays at being a ship's captain.

Irons the doll's pyjamas, then changes her into them and puts her to bed.

(c) *Composite assessment of organization of behaviour*

(Doll play material)

2 (A1 I1)

Examines cup.

3 (A2 I1)

Puts cup on floor in doll's corner.

4 (A2 I2)

Examines cup, spoon, pretends to drink, eat.

Pretends to eat from cup with spoon, asks another child for tea, pretends to drink "pours" out more tea.

5 (A3 I2)

Pours out tea, then takes doll to adult, also teapot, pours a cup for adult, "fills" all the cups, without arranging these on saucers.

6 (A3 I2)

Lays, table, neatly and correctly, pretends to put milk, sugar, tea through strainer in each cup.

6 (A3 I3)

Seats doll in place in corner, lays table correctly, tells doll to sit up. (Involving definite imaginative use of material not mere reproduction of obvious use.)

7 (A4 I3)

Takes bucket of sand to table, spreads cloth, serves out, pretends to eat, then builds builds tower of bricks calling it "big, big ice-cream", wraps plasticine and beads in paper, calling these "a new cake".

8 (A4 I4)

Takes shovelfuls of sand, places these under orange box which she uses as an oven saying: "They're big cakes". Brings cups and saucers to adults filled with sand, then returns to rearrange cakes in oven. (Though most of this play is dominated by the idea of baking cakes for the dolls, the purpose of these efforts is forgotten.)

9 (A5 I4)

Shovels sand in cake tin, pounds it down. Takes to orange-box, used as oven. Then pours out "tea", puts some cups of sand in the oven. Examines her cakes "to see if they're done", puts them out on the doll's table. Then takes the cups of sand from the oven and offers to adults together with plasticine on a plate calling them "potatoes".

10 (A5 I5)

HABITUATION OF MOTOR STARTLE IN ANXIOUS AND RESTLESS CHILDREN

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INTRODUCTION

AMONG children often seen in child guidance clinics are the so-called hyperkinetic impulse disorders (Knobel, Wolman and Mason, 1959; Clements and Peters, 1962; Laufer and Denhoff, 1957). They are frequently characterized by high motor activity and other signs of defective controls such as distractibility, emotional lability, and impulsivity. These children are likely suspects for underlying central nervous system defects or maturational deficits in central inhibitory mechanisms. They contrast sharply with those children who, though highly anxious, appear as over-inhibited and controlled. Little experimental work is available which might throw light on possible organic deficits in hyperkinetic children. In one study it was found that hyperkinetics had lower thresholds for photometrazol activation of the EEG than a comparison group of non-hyperkinetic disturbed children, and following administration of amphetamine, the hyperkinetic children displayed a significant increase in photometrazol thresholds which made them comparable in this respect to the comparison group (Laufer, Denhoff and Rubini, 1954). The suggestion was made that deficits at the level of the diencephalon and reticular system had been corrected by the drug. This hypothesis is in accord with the findings that lesions of the meso-diencephalic reticular system are associated with lapses in attention comparable to those ascribed to the hyperkinetic (Rosvold, Mirsky, Allan, Sarason, Bransome and Beck, 1956).

Ordinarily, motor response to a sudden, repeated stimulus, having no consequences for the organism, tends to habituate rapidly. It has been suggested (Magoun, 1963a, b) that the mechanism of control of habituation involves the reticular activating system. If hyperkinetic children have failed to develop appropriate inhibitory control over motor response to inconsequential stimulation, because of such reticular defects, they should habituate less rapidly to a repeated, sudden stimulus. Since the startle response requires no complicated demands on learning capacities, habituation effects for startle should presumably reflect rather basic aspects of adaptation and neural control.

Although the true startle pattern includes a number of components such as flexion of the arms, arching of the torso, widening of the mouth, and eyeblink, which do not habituate (Landis and Hunt, 1939), there appears to be more than one type of startle response, with habituation of gross motor startle probably controlled by cortical mechanisms other than those involved in the patterned response observed

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by Landis and Hunt (Davis, 1948). It seems possible that some differentiation of the locus of control can be made by observing habituation of a purely involuntary response and comparing it with adaptation of a voluntary motor response. If differences in habituation between diagnostic clinical groups appear for involuntary motor behaviour, some difference may exist between the groups at a lower level of the nervous system than if the differences appear only in voluntary motor control.

METHOD

Subjects. The subjects for this study were children who had been treated previously at an outpatient psychiatric research clinic. They had been diagnosed by a psychiatrist as either neurotic or hyperkinetic. The basis for classifying a child as primarily neurotic was the presence of symptoms or behaviour indicative of a high level of anxiety. These children are characterized by a high degree of unhappiness or personal distress but, unlike the hyperkinetic and acting-out children, are not management problems in school or at home. The hyperkinetic children were diagnosed on the basis of parental and/or clinical observation of excessive motor activity, distractibility, and general restlessness, frequently of life-long duration. Of the 40 children contacted for a return visit to the clinic, 29 were finally selected on the basis of another psychiatric interview with the parents. The mean age of the patients was 10.1, range 6-15.0. All were within the average range of intelligence. The age distribution is shown in Table 1.

TABLE 1. AGE DISTRIBUTION OF NEUROTIC AND HYPERKINETIC PATIENTS USED IN THE STUDY

Age	N	6-7	8-9	10-11	12-13	14-15	Mean age
Neurotic	14	1	5	6	1	1	10.1
Hyperkinetic	15	3	3	5	2	2	10.0

Apparatus and procedure. The patients were conducted to the experimental room by the psychiatrist after she had interviewed the parents and obtained a symptom rating scale from the mother. The male experimenter placed the patient's hands in a modification of the Luria (1960) tremorgraph apparatus, consisting of small metal platforms for each hand, attached to rubber-coated metal bellows. The bellows were connected by tubing to a pneumatic, ink-writing polygraph. The arms were supported by an inclined board, adjusted until the subject's hands were resting horizontally on the platform. The hands were secured to the platform by a stretching watch band attached to the platform. The subject's gross hand movements are recorded by this apparatus, but physiological tremor does not normally appear on the record.

The children were told that they would hear some very loud noises, and upon hearing the noise the child was instructed to depress the right hand to a moderate degree but to leave the left hand quiet. (Preliminary testing established that collateral muscle movements from the activity of the right hand did not appear in the left-hand record.) After a practice trial a standard 22-automatic blank starting pistol was fired at 30-sec intervals, out of the subject's view, for a total of 12 trials.

Parent symptom ratings. The symptom rating questionnaire consisted of 93 items to be rated on a 4-point scale by the parents of the patients. The test-retest reliability of the total symptom score, based on a sample of 50 parents retested after a one month interval, was 0.89 and 0.87, for mothers and fathers, respectively. The correlation between mothers' and fathers' independent ratings of the children was 0.85. These results suggest a moderately satisfactory test stability and inter-observer agreement for the total scores.

A factor analysis of the symptom scale, on a sample of 316 clinic patients and 367 normal children, supports the existence of separate factors of anxiety-related and restless-aggressive symptoms, and conforms in this respect to the results of other factor analyses (Peterson, 1961; Collins, Maxwell and Cameron, 1962). Some validity for these scales is attested to by the fact that they (along with other factor scales) significantly discriminate between children independently diagnosed in our clinic as neurotic or hyperkinetic.

RESULTS

Scoring. The magnitude of the first deflection following the shot was measured in millimetres. There was no difficulty in determining when the initial startle response occurred, as distinct from after-responding. Independent scorers achieved virtually 100 per cent agreement as to the definition of such responses for both left- and right-hand records.

Effects related to diagnosis. The magnitude of the involuntary (left hand) startle responses for the 12 trials is shown in Fig. 1 for the two diagnostic groups. It is evident by inspection that, while both groups habituated to the stimulus, there was no difference in magnitude or rate of habituation of involuntary response between the two diagnostic groups.

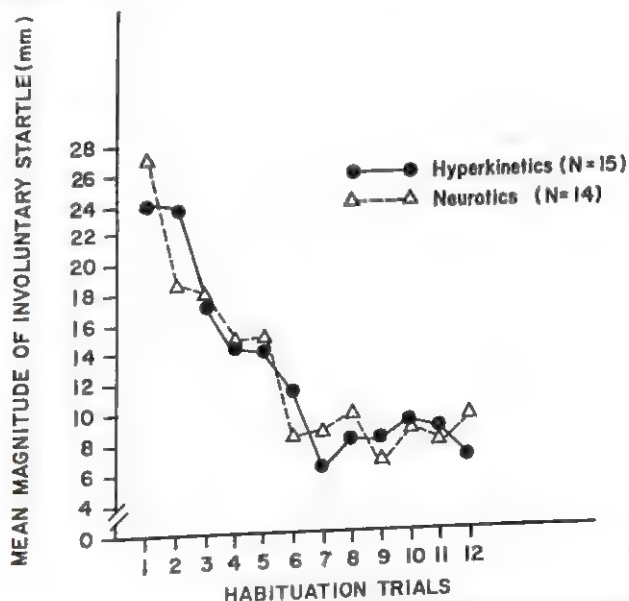


FIG. 1. Habituation of involuntary startle in children diagnosed as hyperkinetic and neurotic.

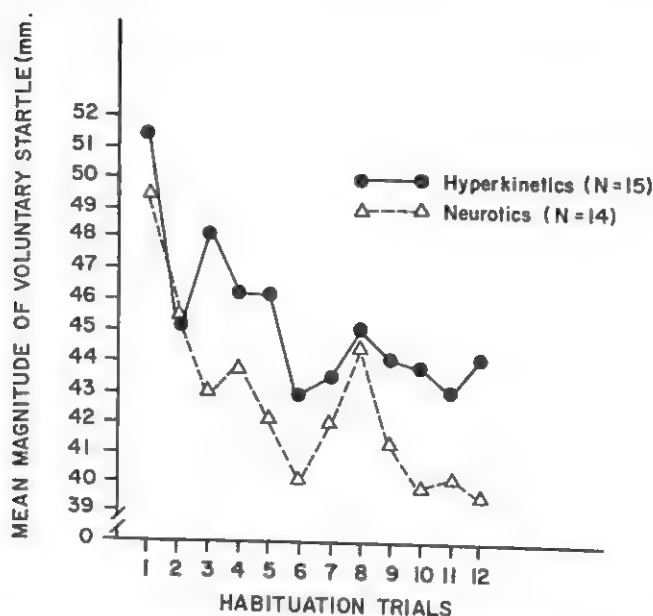


FIG. 2. Habituation of voluntary control over startle response in hyperkinetic and neurotic children.

Figure 2 shows the mean magnitudes of voluntary response by the right hand for each group as a function of trials. Since there is a wide range of ages in the two groups, the comparison was adjusted for age variation by analysis of covariance, using age as a covariate. One subject was randomly excluded from the hyperkinetic group so as to have equal N 's in the two groups. The trials were grouped into four blocks of three. The results are shown in Table 2, indicating a significant difference between the

TABLE 2. ANALYSIS OF COVARIANCE OF VOLUNTARY CONTROL OF STARTLE IN NEUROTIC AND HYPERKINETIC CHILDREN, USING AGE AS A COVARIATE

Source	df.	Adjusted mean square	F
Between Ss	(26)		
Diagnosis (D)	1	5307.490	5.080*
Error (between)	25	1044.790	
With Ss	(83)		
Trials (T)	3	1313.010	6.543†
T × D	3	44.050	
Error (within)	77	200.869	

* $P < 0.05$.

† $P < 0.005$.

groups in degree of voluntary motor control. However, inasmuch as the trials × diagnosis interaction is not significant, it is apparent that the differences reflect magnitude of response across all trials rather than differences in rate of habituation.

The significant adjustment of the covariance analysis is due to the correlation of age with magnitude of response ($r = -0.35$; $t = 1.75$, $P < 0.05$). (It should be noted that this adjustment depends only on the between-subjects effects, so that assumptions regarding equivalence of within- and between-class regression coefficients in analysis of covariance are not in question.)

A further method for measuring the two types of disorder was employed. Included in the parent questionnaire were a number of items relating to the presence of fearfulness and restlessness to be rated on a severity scale from 0 to plus 3. The "restless" items had been culled from the literature on the hyperkinetic impulse disorders. The items are shown in Table 3. These two sets of items from the questionnaire were scored separately, with each child receiving two scores. The possible range of scores for each set was 0 to 54, but the actual range was 0 to 32. On the basis of total magnitudes for the 12 habituation trials of involuntary responding, subjects were divided at the median (13.5 mm.) into those who habituated slowly and those who habituated rapidly. The means of the two types of symptoms are shown in Table 4. An analysis of variance of the symptom scores shows that the interaction between type of symptomatology and degree of habituation is significant ($F = 4.79$, $P < 0.05$). However, inasmuch as the obtained difference does not allow for age effects, the magnitude of involuntary startle was correlated with symptom scores, with age partialled out. The resulting partial regression coefficients are -0.08 and 0.16 respectively, for correlations with anxious and restless symptoms. These values are non-significant and indicate that the parent symptom ratings are correlated with magnitude of startle only by virtue of the correlation of both variables with age. There was no relationship of type of symptom and habituation of voluntary responding.

TABLE 3. ANXIOUS AND RESTLESS SYMPTOMS RATED BY PARENTS

Anxious	Restless
Afraid of new situations	restless
Afraid of people	twitches, jerks, etc.
Afraid of being alone	can't keep still
Worries about illness and death	always into things
Cries easily	goes from one thing to another
Clings to parents or other adults	screaming and temper outbursts
Keeps anger to himself	throws himself around
Easily bullied	throws and breaks things
Unhappy and sad	runs rather than walks
Shy	can't watch TV for long
Afraid friends don't like him	always climbing
Feelings easily hurt	a very early riser
Has no friends	will run around between mouthfuls
Is afraid to go to school	his demands must be met immediately
Day dreams at school	can't stand too much excitement
Sets too high goals	acts like driven by a motor
Is depressed and saddened	unable to stop a repetitive activity
Nightmares	mood changes quickly and drastically

TABLE 4. MEAN SYMPTOM SCORES FOR CHILDREN BELOW AND ABOVE THE MEDIAN IN RATE OF HABITUATION OF INVOLUNTARY RESPONSES

Slow habituation ($N = 14$)*		Fast habituation ($N = 14$)	
Anxious	Restless	Anxious	Restless
13.79	18.21	10.79	8.43

*Note: for purposes of using a balanced analysis of variance, one subject was randomly excluded from the analysis.

Effects related to amount of symptomatology. The total scores based on all 93 items of the parent questionnaire were dichotomized at the median (114.5) and the habituation curves compared for the low and high symptom groups. The mean magnitudes of involuntary response are shown in Fig. 3. The overall difference between the high and low symptom groups in magnitude of response for the 12 trials is significant: the rank order correlation between mean magnitude of response for the 12 trials and total symptom score is 0.32, $P < 0.05$, indicating a small but reliable relationship between total symptoms and mean involuntary response magnitude across all trials. From these data it would appear that the total degree of the child's illness, as determined by an additive combination of all symptoms, is related to ability to adapt to the sudden, loud stimulation. However, this correlation again is non-significant when corrected for age (partial $r = 0.28$, $P < 0.10$).

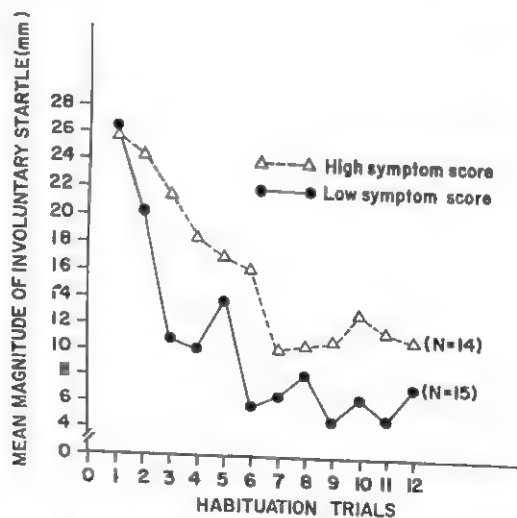


FIG. 3. Habituation of involuntary startle response of disturbed children who are rated by parents as having many or few symptoms.

DISCUSSION

The results indicate that with these methods of measuring motor habituation to startle, there is no difference in *rate* of involuntary or voluntary habituation as a function of the original diagnosis. However, hyperkinetic children are significantly poorer in their ability to maintain voluntary control over the *magnitude* of the startle response. The rate at which they adapt to a loud, noxious stimulus is similar to the

rate for neurotic children, so that differences between the groups appear to reflect differences in initial degree of development of voluntary control mechanisms, rather than differences in rate of adaptation. The fact that both rate and magnitude of involuntary responding are similar in the two groups further suggests that the difference between these two diagnostic groups is a function of higher cortical inhibitory mechanisms.

Although it is generally assumed that the control mechanisms for the slower forms of startle response are cortical in nature, as opposed to the subcortical and brainstem reflex mechanisms involved in the extremely fast (40 msec or less) component of the startle pattern (Landis and Hunt, 1939; Lindsley, 1951), it is known that lower structures—particularly the reticular formation—play a significant role in facilitation and inhibition of both cortical and spinal adaptations (Lindsley, 1951), leaving open the possibility that reticular functioning could play a role in the ability to maintain inhibitory control of the higher centres.

The fact that rate of habituation of involuntary startle is significantly related to overall level of symptomatology appears to be due solely to age effects. A plot of total symptom scores by age for a normal school sample shows a steady and rather sharp decline in these scores with age, suggesting the possibility that the total symptom score reflects some general maturational or developmental level. Voluntary control of startle magnitudes is also significantly correlated with age ($r = -0.33$), indicating that maturation leads to greater capacity for motor inhibition.

Another possible source of the differences found in this study is suggested by the early electromyographic studies of habituation by Davis (1948). He noted that the level of motor response to auditory stimulation is considerably affected by the pre-existing level of tension in the muscles. Thus, the motor responses appear to follow the pattern of excitation already present and to be facilitated by it. The startle effect might be a function of pre-stimulus tension levels, and if the latter were higher in the hyperkinetics it could account for their poorer control. Further studies will be required to rule out the possibility that the restless children have higher pre-existing tension in the muscle groups involved in the voluntary control over startle response.

SUMMARY

Two groups of children diagnosed as neurotic or hyperkinetic were measured on the magnitude of response and rate of habituation of a startle reaction to a series of loud auditory stimuli. Involuntary adaptation and voluntary control over the motor response were examined using a modification of the Luria tremorgraph. When corrected for age effects the hyperkinetic group showed poorer voluntary control over the magnitude of startle, though they did not differ from neurotics either in rate of adaptation or in magnitude of involuntary startle. The results are interpreted as reflecting differences between the diagnostic groups in initial level of higher inhibitory control rather than ease of habituation.

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THE MERRILL-PALMER TEST IN USE WITH THE CHILDREN FROM THE ISLAND OF TRISTAN DA CUNHA

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INTRODUCTION

IN JANUARY, 1962, the writer was asked to undertake a psychological assessment of the school children from the island of Tristan da Cunha. Some results of this study have already been reported elsewhere (Keir, 1965).

At the time of the enforced evacuation to Britain consequent upon the eruption of the central cone of the Island, the Tristanian community numbered 264 individuals, of whom over 40 were children of school age, while 23 were preschool—most of them at that time under 3 years. An extension of the investigation to include a study of the mental development of this group, together with an appraisal of child rearing practices among this remote and isolated community, suggested itself as highly desirable for a number of reasons. Assessments of the intelligence of the school children carried out some two months after they first attended school in this country had shown that those of primary school age were scoring at a higher level than the secondary school children. The opinion was formed that this was not wholly due to either the type of tests used or to different testing attitudes in children of different age ranges. Examination of the preschool group would show whether this trend was continued.

In itself examination of young children coming from such an environment would prove of interest. The community still presents many features relatively unchanged since Corporal Glass and his companions decided to remain behind when the garrison, placed there during the time of the Napoleonic War, left the Island in 1816. The slowness of change may be accounted for in terms of the geographical isolation of Tristan da Cunha and the conditions of life there, which approximate to thecrofting communities of the Western Isles of Scotland. Means of livelihood have altered little over the past century, although industry, in the form of a canning factory opened since the last war, has taken root in the island. Another important feature of the community is their close blood relationship. The present inhabitants stem from eight men and seven women who settled there between 1816 and the early years of this century.

The barriers to change imposed by island conditions have not been appreciably affected by education, which until recently was sketchy and sporadic. Books are limited in number, and even when the supply of school books increased, teachers reported the difficulty of using texts which demand of their readers knowledge of an environment very dissimilar to that of the Island itself. All these conditions combined to preserve many attitudes and forms of behaviour derived from the early settlers. Thus, their speech and much of their language usage is recognizably early Victorian.

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Their outlook is limited, and rather naturally the inhabitants lack curiosity about the outside world. The community may thus be regarded as genetically and environmentally inbred and culturally and educationally deprived.

A study of how development in early childhood was affected by such conditions was hence of value in its own right. Such an investigation could not be undertaken until July, 1963, when the children had been in England some twenty months. It then became a matter of urgency for it was known that the Islanders were definitely returning in October. In the time available, with only one examiner, it was not possible to do more than carry out one test of development—the Merrill-Palmer. Information about child rearing practices could not be obtained through systematic study, nor could data about the general personality characteristics of the preschool children be gathered except through observation of their behaviour during preliminary visits to the homes, and during the test session itself. While the delay had the advantage of adding to the numbers old enough to be assessed, there was a distinct possibility that they might have become 'contaminated' during their stay here, and that their performance might reflect the effects of their new environment. However, the opinion was formed that their responses were very much as they would have been on Tristan, and that the children had not been substantially changed by their new environment. A word about their living conditions while in England may explain this.

The two environments shared many features in common. The children remained in a community almost wholly Tristanian. The RAF camp where the Islanders lived housed only a few other families in transit, most of the houses being given over to Tristan families. The camp itself was in an isolated district on an estuary, some ten miles from the nearest large town and two miles from the nearest village. The general store just outside the gates of the camp served the daily shopping needs. The preschool children met few strangers. As on the Island, more than half were looked after by caretaking adults, most often the maternal grandmothers. These were the middle-aged and older women who were precisely the ones most resistant to any form of change. Mothers looking after their own children were mostly those with large families who lived a life largely confined to the camp, except for the occasional shopping expedition on Saturdays. Cultural changes in general were slow, although the Islanders took to innovations such as the telephone and television.

The inhabitants of Tristan are not in general talkative, and their lack of curiosity about outside events persisted during their period in England. In addition, since they regarded their stay as transitory they may have seen no very good reason for altering their ways in any radical fashion. Hence the environment of the homes seemed to resemble conditions on Tristan da Cunha in many fundamental ways. So far as the children were concerned books were rarely in evidence, and their toys were frequently put away, as on Tristan, "for best". The development of the children under school age, therefore, seemed to reflect the intrinsic culture of the Island rather than the English environment.

METHOD

Sample and test procedure

All children between the ages of 2 and 5 years were tested, a total of 20, 10 boys

and 10 girls. The mean age of the boys was 48.5 months and that of the girls 42.4 months, there being more boys and girls above the age of 4 years. (Table 1.) Four

TABLE 1. AGE AND SEX OF SUBJECTS

Age (months)	Boys	Girls	Total
60-64	3	1	4
48-59	4	3	7
36-47	0	2	2
24-35	3	4	7

of the older children should have been at school but attitudes to schooling were perhaps a little negligent and the parents had decided not to start their 5 year olds until they returned to the Island.

The choice of the test was not in doubt. The brightly coloured material and interesting tasks of the Merrill-Palmer (Stutsman, 1931) make it a highly attractive test for young children. Stutsman points out that it does discriminate well between individual children living in approximately the same sort of environment though, as in other tests, the results must be considered with reference to the cultural background and home environment of the children, if these are singularly deprived. Nevertheless, the test items try "to tap abilities every child has had some opportunity to develop, such as the discrimination of colours and judgement of size and shape" (p. 45).

The ceiling is rather low for 5 year old children, but it was decided to use the test, as the Revised Stanford-Binet had proved unsatisfactory for three 5 year olds who joined the infant school in July 1962. The kind of material and responses required of them appeared to lie outside their experience, and their verbal capacity and speech were so poor that the test was abandoned until they had become more used to school and had learned to express themselves better. The largely non-verbal nature of the Merrill-Palmer recommended its use even with the older children. One possible disadvantage lies in the fact that most test items are timed, and this could penalize children living in a culture where time is less keenly regarded than in our own. However, its use would bring out individual differences within the group, and allow comparisons to be made between the general level of the Tristan children and those living in normal homes and a less deprived type of culture.

General test procedure

Testing was carried out under conditions far from ideal. The goodwill of the parents had to be sought, and by July 1963 this was not always an easy matter, for by that time the Tristanians had had more than their fair share of public attention. Fortunately the examiner was already familiar with all the school children and had also had the opportunity of meeting an influential older woman of the Tristan community. These circumstances favoured a more friendly reception than might otherwise have been the case. Once inside the houses the arrangements for testing were made in a cooperative fashion and testing was satisfactorily carried out. Since

the homes contained no suitable furniture it was necessary for the examiner to carry round a folding table and chair, while notes on test behaviour had to be made under very uncomfortable conditions, in a wet and draughty deserted hut which acted as base between test sessions.

It proved impossible to see the children alone. The Tristanians visit each other a great deal, and records of one test session reveal that there were present at one time or another no fewer than nine adults: the child's father, the mother's sister, the maternal grandmother and her brother, one of his daughters, and an old lady who shared the house, the child's uncle and two older men who dropped in and stayed to watch. However, they could not be asked to leave, and it seemed unnecessary to try, since the little boy seemed to pay not the slightest attention to them. The Tristanians are a people of few words and tend to be non-competitive and self-accepting. Hence, an unbroken silence reigned: the old lady fell asleep, the women knitted, the men watched quietly and there was a remarkable absence of tension. Indeed, the atmosphere was one of tranquillity.

Although Stutsman rightly warns against the presence of other children during the test, this could not always be avoided, particularly during the afternoon sessions when the school children arrived home. However, it was noticeable that the child being tested would hardly look up from the task, while the intruder needed only a whisper or a look to either leave the room or retire to the circle of onlookers where they would watch quietly. Neither the presence of adults nor of other children seemed to distract the younger ones, nor did they involve any undesirable emotional reactions.

Characteristics and behaviour of the children

Although the preschool children, like the school children, varied considerably in appearance and showed the varieties of colouring due to mixed racial origins, they seemed in general to be small for their age. The little girls were dainty and neat in their movements and gave little sign of developing the rather heavy build which characterized many of the older girls and women. Most of them were well cared for, clean, tidy and well-clad. Apart from the usual cold* which afflicted the whole population from time to time, they seemed healthy, although their teeth were neglected and often in very poor condition.

So far as test behaviour was concerned, they showed adaptability and interest. They were most friendly, although most were unaccustomed to strangers and during the preliminary visit were usually rather shy. This wore off fairly quickly during the test, only three continuing to show signs of shyness and timidity. They all adapted to the test material very readily, brick play prior to commencing the test being needed with only three of them. Their concentration was in general excellent, although three of the youngest were noted as being distractable.

They worked in a fairly self-reliant fashion, and perseverance was good. Only in the case of four children was some urging and praise (beyond the usual word from time to time) really necessary to keep them at a task.

Like the rest of the community, however, they were not talkative, while five were

*No child with a cold was tested—one little girl could only be assessed a few days before departure, having previously had a severe catarrhal condition for many weeks.

noted as being extremely quiet. Only four were really verbal, chatting either to themselves or to the examiner during and after the test. Another marked characteristic was their lack of aggression. In this, they followed the Tristanian pattern of behaviour, for aggression is foreign to the culture. They were, indeed, well adjusted, agreeable and easy to test.

TEST RESULTS

The test appeared to work reasonably well for the Tristan children.

- (1) There was a rise of test score with age. (Fig. 1.)

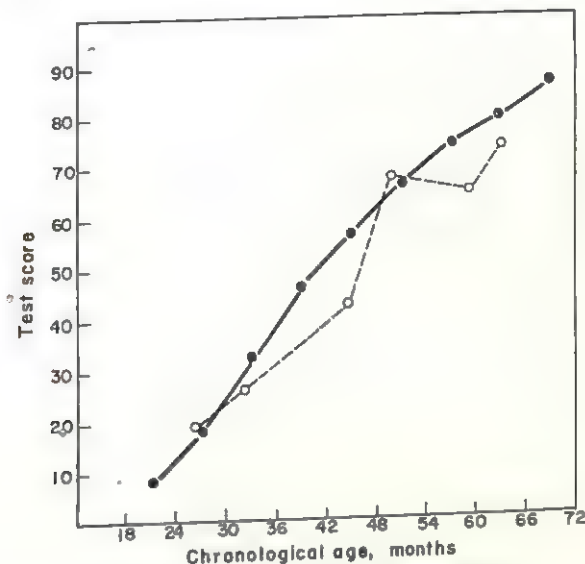


FIG. 1. Curve of score increase with age.
 — (Stutsman, 1931, p. 102).
 - - - Tristanians.

The correlation ratio η_{yx} was obtained and found to be 0.956,* agreeing closely with that found by Stutsman, 0.962. The value of η_{xy} was 0.946, also in close agreement with that obtained by Stutsman, 0.942. Although the curve of the Tristan scores approximates to that obtained by Stutsman, the means are lower for 4 of the 6 age groups. This difference is no doubt due in part to the very small numbers, where one poor result affects the mean unduly (as in age 54–59 months, which consists of only two children).

(2) The test yields a spread of scores and thus shows up individual differences. Such a differentiation in her own sample was stressed by Stutsman as a measure of the validity of the Merrill-Palmer, although like every other test of psychological development for the young child, it is clearly not assessing certain aspects of mental capacity measured by tests for older children.

Table 2 gives the results for boys and girls separately, in terms of mental age,

*This figure is also in substantial agreement with the correlation between score and age calculated by the product moment method, the value of which was 0.908.

TABLE 2. RESULTS

Boys					Girls				
Age (months)	Score	M.A. (months)	s.d.	P. Rank	Age (months)	Score	M.A. (months)	s.d.	P. Rank
64	73	56	- 0.5	20-29	62	69	53	- 0.5	10-19
64*	70	54	- 1.0	10-19	59	59	46	- 1.5	5-9
61	80	63	0.0	50-59	50	70	54	+ 0.5	70-79
59	70	54	- 0.5	20-29	49	67	51	+ 0.5	60-69
50	68	52	+ 0.5	60-70	45	43	37	- 1.0	10-19
50	74	57	+ 1.0	80-89	42	42	37	- 1.0	20-29
48	56	44	- 0.5	30-39	32	26	31	- 0.5	30-39
33	26	31	- 0.5	30-39	32	26	31	- 0.5	30-39
30	20	28	- 0.5	30-39	29	19	27	- 0.5	30-39
26	21	28	+ 1.0	80-89	24	15	25	+ 0.5	60-69

The slight differences between the scores of boys and girls are no doubt due to the smallness of the sample. Since Stutsman herself found no significant sex differences, the results were treated together in a combined distribution (Fig. 2).

*This boy's score lies exactly between - 1.0 s.d. and - 0.5 s.d., but as he was one month older than the C.A. 63 m. for which values were given, the lower one has been taken.

standard deviation and percentile rank. Intelligence Quotients are not included, since a given I.Q. may have a wide range of s.d. values at different ages, so rendering comparison between the performance of children of varying ages meaningless. (Stutsman, 1931, p. 235.) Both the mean and the median percentile ranks lie in the 30th-40th percentile, that is, low average range of ability. In view of the very small numbers it is unwise to draw any firm conclusions, but it is suggestive that the median

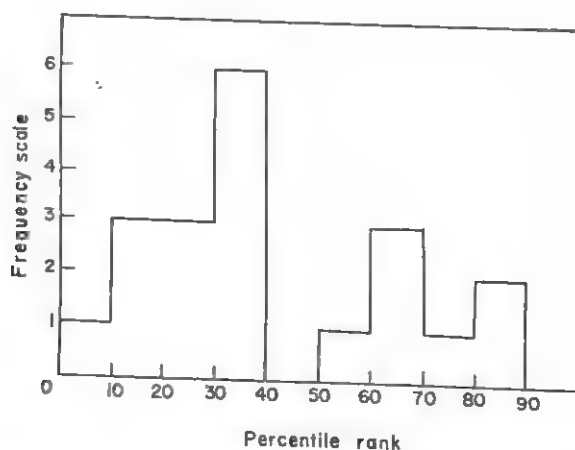


FIG. 2. Distribution of scores in terms of percentile rank.

Category	Percentile rank
Inferior ability	5-19
Average	20-79
Superior	80-94

of the Tristanian scores is similar to that of Stutsman's Child Care group* and lower than that of her normal samples,† where the median was at or near the 50th percentile.

This evidence may then indicate a somewhat lower level of performance among the young Tristanian children, which may be in part due to the effects of cultural deprivation.

Were there any tasks in which this effect might be seen to be most marked, tasks which the group as a whole found difficult? Experience with the school children, and preliminary observation of the preschool children, had suggested that they might be retarded in language development, and this proved to be the case. Their speech was not always easy to understand, for although the examiner was familiar with Tristan pronunciation, she was unfamiliar with infant variants of this. Their vocabulary was limited and their sentence structure was poor (apart from one or two children). Thus, placing the circle in the Seguin formboard, one boy of 64 months observed: "Dat ball go in yah".

These observations were confirmed by the results of the language tests, in which there were a number of failures, despite the low level of two of the tasks (30 months and below). Questions (18 and 24 months) were poorly carried out. Of the 16 children above the age of 30 months, only 5 succeeded at the 24 month level. Action Agent had to be omitted altogether, after a few trials with the older children. It seemed to present an insoluble problem. They became confused, lost confidence and tended to withdraw. In view of this unfavourable reaction it was dropped. The impression gained during the language tests was that failure was related more to poor level of vocabulary and verbal conceptualization than to shyness.

Poor achievement in language was clear cut: passes and failures in other types of tests were more difficult to assess for the group as a whole. A rather coarse method of assessment was adopted, based on the 50 per cent pass taken by Stutsman as the criterion for inclusion of an item at a given age. The results of the Tristan children

*Children in foster-homes and institutions.

†Children on the waiting list of the Merrill-Palmer school, and those brought by brothers and sisters attending ordinary schools.

TABLE 3. PASSES AND FAILURES ON NEST OF CUBES

Age (months)	No. tested	Pass (Test levels in months)		Fail (Power)
		30	24	
24	3		1	3
30	4			2
36	0			1
42	2	4		
48	5	2		
54	2	3		1
60	4			
Total no. tested	20	9	1	10

on each item were examined, and if more than 50 per cent failed either at their chronological age or below, this was taken to be suggestive. If the items so failed were of a level of difficulty much below the ages of the children failing (as in language) this was considered to lend added significance. One item which seemed to present special difficulty was the Nest of Cubes (Table 3).

It can be seen that 10 of the 20 children failed altogether, including not only 8 of the 9 children at or below 42 months of age, but also two above this age. Stutsman's own figures show that 56 per cent of children aged 30 months could be expected to pass this test, while above that age it is assumed that nearly all children succeed. She points out (p. 214) that "As a rule failure is due solely to the inability to judge size and to manipulate the corners of the cube so that a smaller cube will fit into a larger one". So far as could be seen, inability to judge size appeared to be the common cause of failure. Since this was so marked among the younger children, it may denote immaturity of a perceptual mechanism, no doubt attributable to lack of requisite experience.

Among the other Cube items on which performance was rather poor, was the 6 cube pyramid, failed by 4 of the 11 children for whom the test was appropriate, 3 of these above the age of 54 months. In addition 2 of the older children were slow, and although succeeding, lost on time. However, in view of Stutsman's own figures for per cent passing at various levels, these results may well lie within the normal range of failures.

Errors on the Seguin Formboard were more numerous than expected, which may again point to immaturity in form perception. At the 42 month level (9 errors or less) only one child of 60 months passed (Stutsman's figure being 95 per cent). Half the group were able to score only at the 36 month level (28 errors or less). Two of the three children aged 30-36 months failed altogether, while a girl of 42 months failed the first trial. This test then did seem to present a task of special difficulty for most of the children.

The Manikin deserves a mention, being failed by 4 of the 11 children above 48 months, including 3 whose total score showed them to be of good average intelligence, while a further two scored below their chronological age. They enjoyed attempting this task, hence failure was not due to lack of interest, mentioned by Stutsman as a possible cause.

Poor performance here may be linked to their inability to Draw a Man, a test given to all those over 3 years of age. Goodenough (1926) found that over 60 per cent of her 4 years olds obtained scores between 3 and 8 points, while only some 10 per cent scored less than 2 points. Of the 11 Tristan children aged 4 years and over, 5 failed to score at all, or made not more than 2 points. This finding is in agreement with the generally low scores of the older Tristan children to whom the Draw a Man test was also given. It may therefore not be without significance that the ability of the preschool group to piece together the Manikin should be below that of children of their own age. So far as the simple drawing tasks in the Merrill-Palmer were concerned, it was noticeable that whereas drawings of the circle and cross were up to age, failure occurred in the star test. Only 2 children succeeded in drawing a star, one a boy of 61 months, and the other a boy of 50 months, who was also the only one who successfully drew 3 stars. Stutsman's figures of success with one star

are 48 per cent and 71 per cent respectively for children in the 54 and 60 month age groups.

The Tristan children seemed to handle the pencil with competence, and it is possible that failure here may again be related to some visuo-perceptual immaturity.

Slow time was noted in several tests (though this slowness was not consistent for any one child from item to item), for instance, in the Seguin and in Picture Puzzle I. It was clear, however, that learning was taking place during trials. Indeed the downward trend in time taken was found to be statistically significant at the 1 per cent level.* The girls, especially, improved their performance noticeably as between Picture Puzzle I and Picture Puzzle II.

Of the tests mentioned, the most significant failures appear to be in language, nest of cubes, errors in the Seguin Formboard and drawing a star. Language is clearly due to cultural deprivation, while the effect of environment is probably also seen in the difficulty they experienced in judging size and shape, due to their limited access to picture books and toys.

So far as the main results show, the young Tristan children are in general of low average intelligence. This may reflect the influence of their deprived environment. On the other hand it is of interest to note that while homes differed little in respect of books and toys provided, those children who scored at or above $+0.5$ s.d. had at least one parent who had been rated in an independent investigation† as of average intelligence or above.

SUMMARY

The Merrill-Palmer Test was administered to 20 Tristanian children, aged 29-64 months, temporarily resident in England. The test appeared to be a fairly effective means of assessing some aspects of their psychological development, for the results showed a correlation between test score and age which was very similar to that obtained in Stutsman's standardization sample. They also showed up individual differences among the children.

Although the median score for the group was below that obtained by Stutsman, 16 of the 20 children were found to be within the average range. There was evidence of a language handicap, and some suggestion of visuo-perceptual immaturity. These may be ascribed to their culturally deprived environment. As far as general success on the test is concerned, as distinct from failures specific to the group, there seems to be some slight evidence of inherited ability.

*I am indebted to Dr. Jonckheere for help over this. Details of his method will be found in Jonckheere (1954).

†A study concerned with the association between level of intelligence and degree of inbreeding.

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A FIVE-YEAR STUDY OF THE LANGUAGE OF AN AUTISTIC CHILD

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INTRODUCTION

IN A PREVIOUS article (1961) we reported observations over a six-month period on the language of a child diagnosed as autistic and compared our results with those obtained by McCarthy (1930) and Sampson (1956) with normal children. These observations have been continued for a period of five years, from the age of $6\frac{1}{2}$ to $11\frac{1}{2}$ years, and the results can now be presented.

Our aim has been to study the development of this child's language and to see whether it showed any distinctive features not shown by younger normal children.

The subject

Jimmy was reported to have progressed normally up to the age of 2, and had started to speak, after which there had been an arrest in his development, and a gradual complete loss of speech, without apparent physical cause.

On admission at 5 years he was still not speaking. He showed an inability to relate in the ordinary way to people. For example, he took no notice of adults who came into the room and avoided looking at them. He also ignored other children. He showed a desire for the preservation of sameness, refusing to leave the house to play in the garden and persisting in repetitive activities, such as rocking, or manipulating shiny objects.

His performance on the Kohs Blocks test* (Kohs, 1923), which was above average for his age, was suggestive of "good cognitive potential" (Kanner, 1956), although he lacked speech and his emotional and social behaviour resembled that of a two-year old. (Tested later on the W.I.S.C. at the age of 11 years 5 months, he obtained an above average scaled score of 12 on the Kohs Blocks sub-test, but extremely low scaled scores, ranging from 4 to 0 on all the other sub-tests.) On these grounds he was diagnosed as "autistic" in Kanner's sense (Kanner, 1943, 1956).†

After 3 months in the unit he began to speak, using single words at first, and after 10 months he began to put words together.

This investigation began after he had been 21 months in the unit, when his language had reached about a 2-year level. During his stay in the unit he received

*Alexander's (1946) method and norms were used.

†Rimland (1964) has suggested that this may not be an authentic case of Kanner's Early Infantile Autism, as the age of onset was between 2 and 3 years. However, as Wing (1964) points out, a number of cases have their onset between one and three years and are thereafter indistinguishable in their symptoms from autistic children whose illness began at birth.

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regular individual play therapy. This was carried out by occupational therapists under the supervision of the Consultant Child Psychiatrist. His first therapist took him back to babyhood, giving him the bottle and progressing later to messy play. It was during this time that he began to talk. Later he was taken over by another therapist who felt that some direction of his play and restraint of "silly" or manneristic behaviour produced the best results. In both cases the emphasis was on the value of the relationship with the therapist, and the child's behaviour was not "interpreted" to him.

Language in infantile autism

Kanner (1948, 1956, 1958) described the following characteristics of language in autistic children. There may be no speech at all. In those who do speak there is often a failure to use language to convey meaning to others. There is a tendency to repeat the same phrases, rather than to construct original remarks. Immediate echolalia may be present, or delayed echolalia. A phrase or sentence heard may be "stored" by the child and uttered later just as heard, without any change to suit the altered situation, e.g. a child once told by his mother, "Now I will give you your milk", later expresses his desire for milk in exactly the same words. This gives rise to the reversal of personal pronouns. The child comes to speak of himself as "you" and the person addressed as "I". Affirmation is indicated by the repetition of a question. It takes many years before such a child can use the word "yes". Kanner also gives examples of "literalness" (1958) and the apparently irrelevant or non-sensical remark which, in his view, has meaning for the child as a kind of private metaphor (1946-47).

Wolff and Chess (1965) found that the most striking abnormalities in the language of schizophrenic children were "stereotyped repetition of utterances appropriate to an earlier developmental level or to a previous environmental context, accompanied by a lack of normal expressions of curiosity and of responsiveness to changing environmental cues".

METHOD

Conditions of observation

The method was modelled on that used by McCarthy (1930), who studied the language of normal children using samples at successive age-levels from 18 months up to 4½ years. She used a play session in which an adult was with the child, and in which all remarks were recorded. We used similar play sessions, each lasting 15 min and using standard play materials.

The aim was to obtain spontaneous speech, but to ensure rapport it was necessary for the adult to speak to the child in a natural way, sometimes to ask questions, and to be ready to enter into play.

McCarthy only continued the session until the child had made 50 remarks, whereas we continued for 15 min, after which the child had invariably made more than 50 remarks.

The sessions were grouped in sets of four. Within a set they were spaced a week apart, and the sets of four were spaced initially at three-monthly intervals, and later on at four-monthly intervals. Over the period of five years there were 56 sessions.

Classification of remarks

Like McCarthy, we classified our subject's remarks according to comprehensibility, length, grammatical structure and function. The words were classified according to parts of speech.

In classifying function we followed McCarthy and Piaget (1923) in contrasting egocentric and socialized speech. However, we also divided egocentric speech into the following sub-categories:

- (1) Repetition of what the adult has just said.
- (2) Repetition of what the child has just said (when such repetition was purposeless).
- (3) Inappropriate and purposeless remarks.
- (4) Thinking aloud.
- (5) Action accompaniments (e.g. the child says "sit down" as he sits down).
- (6) Play accompaniments (that is, a running commentary by the child on his play, which does not require any understanding or response by the hearer).

This classification was discussed more fully by Cunningham and Dixon (1961).

Reliability of classification

Two scorers marked independently the records of four sessions (taken from successive years). The degree of agreement obtained is shown in Tables 1 and 2. The extent of reliability is satisfactory and gives us confidence in our measures of comprehensibility, length, structure and parts of speech. It was not possible to use this method of assessing the reliability of the classification of function, since the original scoring was the result of consultation between two observers, both of whom had witnessed the session. However, one session, scored five years later, from the record alone gave an agreement of 81.4 per cent. This reliability is quite adequate when we are considering fairly large differences in scores. As would be expected, some of the autistic child's more "odd" remarks were difficult to classify as to their function.

TABLE 1. EXTENT OF AGREEMENT BETWEEN TWO INDEPENDENT MARKERS

	Number of remarks (4 sessions)	Percentage of agreement
Comprehensibility*	508	99.0%
Length	440	96.4%
Structure	440	90.2%
	Number of words (1 session)	
Parts of speech	284	95.1%

*The comprehensibility of a word or sound was judged at the time by the two observers in consultation. These figures were obtained by marking the records, which contained dashes for incomprehensible sounds.

TABLE 2. RESULTS OBTAINED BY TWO INDEPENDENT MARKERS ON FOUR SESSIONS TAKEN FROM SUCCESSIVE YEARS

	Marker A	Marker B
Percentage of incomprehensible and semi-comprehensible remarks	15.8%	14.1%
Mean sentence length	2.5 words	2.5 words
Percentage of incomplete sentences	54.7%	50.5%
Parts of speech (1 session)—	%	%
Nouns	37.0	36.7
Verbs	24.2	22.8
Adjectives	8.9	12.8
Articles	9.3	9.3
Personal pronouns	0.0	0.0
Other pronouns	5.3	4.6
Adverbs	6.7	5.3
Prepositions	7.8	7.8
Conjunctions	0.4	0.4
Interjections	0.0	1.4
Miscellaneous	1.4	0.0

Comparison of our results with McCarthy's

As our aim was to compare Jimmy's language with that of normal children at a similar level of language maturity, it was necessary to select criteria for this. Since they both increase steadily with age in the pre-school years (McCarthy, 1930), we

TABLE 3

		Mean sentence length	Number of different words in 50 responses
McCarthy (1930)	24 months	1.8	29
	30 months	3.1	51
Date of interviews*			
AUTISTIC CHILD	1.11.59	1.9	25
	1.2.60	2.5	34
	1.5.60	3.0	44
	1.11.60	2.8	44
	1.3.61	2.7	50
	1.10.61	2.8	42
	1.2.62	2.7	44
	1.6.62	3.0	45
	1.10.62	2.9	52
	1.2.63	2.5	40
	10.6.63	2.2	44
	1.10.63	2.3	43
	1.2.64	1.9	39
	1.6.64	2.8	45

* Each figure refers to a group of 4 interviews and the date refers to the mid-point in time of that group.

decided to use as our criteria:

- (a) average length of sentence,
- (b) variety of words used.

Throughout the period of observation (from age $6\frac{1}{2}$ to $11\frac{1}{2}$ years) Jimmy remained between McCarthy's 24 and 30 months level for length of sentence. In variety of words he was also between the 24 and 30 months level for nearly the whole period (Table 3). We therefore compared Jimmy with these two age-groups.

RESULTS

(1) *Length of sentence*

During the first six months of observation, Jimmy advanced in mean length of sentence from 1.9 to 3.0 words, or from a 24 months to a 30 months level (Table 3). He progressed from such sentences as "Gone away" or "Draw Jimmy", to "There's a boy in the back", or (less grammatically) "Want a driving man look out a window". But after this he made no further advance in mean sentence length and even, during the last two years of observation, appeared to go back. At this time he developed an obsessive habit of writing or naming letters and the things they stood for, e.g. "C", "Cat". He also learned in the last year to use the word "yes" as an answer and did so quite frequently. These two factors produced an increase in the number of one-word remarks, and thus a decline in mean sentence-length. In spite of this, he still uttered occasional long sentences such as:

"Mr. Smith took you for a wee run in the car", or

"You've not got your bathing suit going in the water", thus showing that he retained the ability to use long sentences, which he had developed during the first six months of observation.

(2) *Variety of words used*

This also showed an advance in the first year, followed by an absence of improvement, and again he did not get beyond a 30 month level (Table 3).

(3) *Comprehensibility*

Jimmy's articulation was sometimes very poor, and at other times quite clear. There was a reduction in clarity during the middle of the period studied and an improvement in this respect towards the end (Table 4). The reasons for this were not apparent. Incomprehensibility meant in most cases that his speech was too indistinct to be understood. On a few occasions he uttered incomprehensible "words" which were such that one could not tell if they were neologisms or gross mispronunciations. (Since systematic observations ceased, he has used definite neologisms, for example, "Gadcastle".)

(4) *Incomplete sentences*

Throughout the period Jimmy used more incomplete sentences than either the 24 or 30 months normals of McCarthy (Table 4) in spite of the fact that his mean sentence length remained between the 24 and 30 months level. Although he could express fairly complex ideas, he did so incompletely. For example, he said:

TABLE 4

		Percentage of incomprehensible responses	Percentage of incomplete sentences†
McCarthy (1930)	24 months	33.0	25.1
	30 months	11.0	18.1
	36 months	7.0	16.2
<hr/>			
Date of interviews*			
AUTISTIC CHILD	1.11.59	6.5	41.8
	1.2.60	8.8	34.7
	1.5.60	9.1	46.1
	1.11.60	14.5	35.2
	1.3.61	17.7	51.4
	1.10.61	14.7	51.2
	1.2.62	11.2	52.0
	1.6.62	12.4	49.6
	1.10.62	11.9	50.8
	1.2.63	11.5	38.7
	10.6.63	6.3	31.3
	1.10.63	1.6	31.7
	1.2.64	1.1	30.0
	1.6.64	1.9	35.7

*Groups of 4 interviews.

†Comprehensible sentences only.

"Wanta draw Jimmy on chair"
when he meant:

"I want you to draw Jimmy sitting on a chair".

The main reason for his omissions seemed to be a lack of grasp of the rules of syntax. The words omitted were usually not essential to the meaning of what he said. Articles were frequently missing as in:

"Door's locked"

"Jeep's broken".

The verb "is" was often omitted, as in:

"Table back"

"Box upside down".

Auxiliary verbs were left out, as in:

"Mummy falling"

"Jimmy like a boat".

The subject was often omitted when one would normally use a pronoun, for example:
"is Christmas stocking" (meaning "that is a Christmas stocking"), or:

"keep falling out" (meaning "they keep falling out").

Prepositions were lacking at times, as in:

"open a key" instead of "open with a key".

He sometimes departed from grammatical order, as in:

"is falling tea" when he meant "the tea is falling".

TABLE 5. PERCENTAGES IN THE MAIN CATEGORIES OF FUNCTION*

		Egocentric remarks	Emotionally toned remarks	Remarks giving information†	Questions	Answers
McCARTHY (1930)	24 months	6.5	18.3	40.8	13.9	16.6
	30 months	4.0	14.2	57.7	3.5	14.6
AUTISTIC CHILD	1.11.59	35.0	24.6	29.7	0.0	7.4
	1.2.60	31.0	23.4	31.0	0.3	6.6
	1.5.60	21.9	35.2	28.6	0.0	8.6
	1.11.60	23.0	30.7	32.3	0.5	12.0
	1.3.61	26.9	30.0	32.8	0.0	7.2
	1.10.61	47.7	18.4	27.8	0.0	5.9
	1.2.62	36.3	34.6	21.6	0.0	3.1
	1.6.62	43.3	20.7	31.1	0.4	4.1
	1.10.62	29.0	22.9	42.7	0.4	5.0
	1.2.63	54.6	2.3	34.4	0.0	8.3
	10.6.63	36.1	19.3	33.8	0.2	10.6
	1.10.63	32.8	41.9	9.7	0.1	15.4
	1.2.64	33.7	25.6	7.4	0.0	32.7
	1.6.64	34.0	15.3	25.4	0.0	25.3

*Comprehensible responses only.

†Excluding answers.

Other examples of breaches of syntax were:

"Jimmy's make it black"

"There's a brown"

"There's a numbers"

"It's very much 1963"

"Will have it last year".

Function

Egocentric responses. Throughout the five years Jimmy made more egocentric responses than McCarthy's subjects, even when compared with those of 24 months (Table 5). 34.7 per cent of his remarks were egocentric compared with 6.5 per cent of McCarthy's 24 months old children. A large proportion of his egocentric remarks consisted of immediate repetitions. 10.9 per cent of all his remarks were immediate repetitions of his own remarks and 8.9 were repetitions of the experimenter's. The following example illustrates both kinds of repetition:

*S. "is making a birthday cake"

S. "making cooking a birthday cake"

S. "making it"

S. "it coming"

S. "it coming"

I. ("Is it ready?")

S. "It's ready"

I. ("Look and see")

*S. = Subject. I. = Interviewer.

S. "Look and see"

S. "It's cooking"

I. ("Have you switched the cooker on?")

S. "Switch the cooker on"

S. "It switch the cooker on".

Instances of delayed repetition occurred but were rare, e.g. "I'll buy you one in town", when he had lost something, and "Clever boy, Jimmy", as he was drawing.

Thinking aloud, which often consisted of muttered remarks, accounted for 5.6 per cent, action accompaniments 4.2 per cent, and play accompaniments 1.5 per cent. 3.5 per cent of his remarks were inappropriate or apparently purposeless. For example, he said:

"Car's finished", "take it out",

as he put the car into the toy oven, or "not too big" about a key which *was* too big to go into a hole.

It is difficult to account for this kind of remark, but we had the impression that he sometimes babbled without thinking what he was saying or relating it carefully to the context.

Socialized responses

Emotionally toned remarks. Jimmy made more emotionally toned remarks, chiefly demands and requests, than McCarthy's groups (Table 5). This might, however, be due to the fact that he was more familiar with the interviewer than McCarthy's children. A child makes more demands on someone he has come to know.

It will be noted also that there was considerable variation in the number of emotionally toned responses, depending on the type of play the child chose. For example, if he was getting the interviewer to draw things for him, the number of demands and requests went up. For example:

S. "Draw a Jeep"

I. ("Jeep?")

S. "That's a Jeep"

S. "In a box"

S. "In a box"

S. "Draw Jeep falling down"

S. "Draw Jeep standing on is"

S. "Make standing on is"

I. ("Standing on?")

S. "Head".

Information

Over the whole period he made consistently fewer remarks giving information than McCarthy's normal children of 30 months and for most of the time he made less than the 24 months group (Table 5). Since our figures are percentages this lack is a reflection of the excess of egocentric and emotionally toned remarks.

Questions

He asked practically no questions over the whole period, a striking difference

from McCarthy's 24 months child and in strong contrast to what one expects from normal young children (Table 5).

Answers

He gave considerably fewer answers than McCarthy's normals, except during the fifth year when the number increased sharply. During the first four years, he scarcely ever used the word "yes", and if he wished to answer in the affirmative, he would repeat all or part of the question. For example:

I. ("Shall we draw?")

S. "Draw"

I. ("Shall I eat some?")

S. "Eat some".

But his repetition of all or part of a question did not always imply affirmation. Often he repeated part of a question, when he had not understood it. For example:

I. ("Can he manage?")

S. "Manage"

I. ("What does it mean if the light is red?")

S. "It's light is red".

Jimmy's difficulty in understanding questions may be illustrated by the following conversation:

I. ("Have you ever been to the sea-side?")

S. "With Mr. Jones"

I. ("Oh, he took you, did he?")

S. "Took you"

I. ("How did he take you?")

S. "In the in the Sandbeach, in the sea-side"

I. ("How did he get there?")

S. "Get there"

I. ("What did he go in?")

S. "In the water",

"In the Sandbeach"

"In the Sandbeach"

I. ("Did you go in a train?")

S. "No. Go in the water"

"In the water"

I. ("Yes, but you had to get from here to Sandbeach, didn't you?")

S. "Sandbeach"

I. ("How did you go along the road to Sandbeach?")

S. "Sandbeach down there"

I. ("Did you go in a bus?")

S. "No"

"er go to Sandbeach"

"er go in a car".

The shortage of answers in the first four years may have been due to his difficulty in understanding some of the questions. Questions were often ignored or just repeated. In the fifth year he started to use the word "yes" as an answer, and from then on he

used it frequently, so that the number of answers increased. At this stage he used "yes" to imply compliance or assent (in contrast to "no", which was usually a protest), but it should not be assumed that he fully understood all questions to which he answered "yes". Only 50 per cent of his "yes" and "no" answers were correct in a test given later in which he was asked such questions as:

"is this a knife?" (pointing to a knife), and then

"is this a knife?" (pointing to a fork).

Parts of speech

Although in the first year Jimmy used more nouns than McCarthy's or Sampson's 30 months children, this excess was not maintained (Table 6). Over the whole

TABLE 6. PERCENTAGE OF EACH PART OF SPEECH OF TOTAL WORDS USED

	McCARTHY 30 months children	SAMPSON 30 months children*	Autistic child					
			1st year	2nd year	3rd year	4th year	5th year	All interviews
Nouns	25.8	28.3	36.4	27.1	25.8	35.3	24.9	30.0
Verbs	23.4	22.2	25.5	25.4	28.8	19.7	24.6	25.1
Adjectives	—	7.1	8.3	12.7	11.0	9.4	9.1	9.8
Articles	—	6.6	6.7	10.7	9.3	5.4	5.5	7.2
Adjectives + articles	14.3	13.7	15.0	23.3	20.3	14.8	14.5	17.0
Personal pronouns	—	4.2	0.9	0.2	1.1	1.6	4.2	1.8
Other pronouns	—	14.3	4.0	8.7	9.3	4.4	8.0	6.8
All pronouns	19.0	18.6	4.9	8.3	10.4	6.2	12.2	8.6
Adverbs	6.7	9.4	10.2	6.0	8.2	5.5	6.8	7.6
Prepositions	4.6	3.7	5.8	5.8	3.3	12.3	7.0	6.6
Conjunctions	1.7	0.8	0.1	0.4	0.2	2.5	0.9	0.8
Interjections	2.8	1.5	1.4	0.7	0.3	1.4	0.3	0.8
Miscellaneous	1.8	1.9	1.3	2.7	2.7	2.3	8.7	3.5

*Obtained from original records kindly lent by Miss Sampson.

period nouns, verbs, adjectives, articles, adverbs, prepositions, conjunctions and interjections showed little difference from the frequencies for normal children of 30 months. Only the proportion of pronouns used was consistently less than that in McCarthy's or Sampson's group. There was a shortage of pronouns such as "this", "that" and "what". We have seen that Jimmy often omitted them, as in "is Christmas stocking".

During the first four years there was also a shortage of personal pronouns. He nearly always used the name "Jimmy" for himself and a nickname for the experimenter. In the fifth year he started to use the words "I", "me" and "you" more frequently, as is shown by the rise in personal pronouns up to Sampson's level. But more often than not, at this stage, he used these words incorrectly. He would use

"me" or "my" to mean "you", and sometimes "you" to mean "me". In the following example he uses "my" or "me" to mean "you":

- I. ("You want me to draw them on a train?")
 S. "My draw them on a train"
 I. ("You draw them on a train?")
 S. "No, me"
 I. ("You want me to draw you on a train, is that right?")
 S. "That right, yes"
 I. ("Me?")
 S. "Me"
 I. ("or Jimmy?")
 S. "No", "no", "it's me".

He also sometimes used "you" to mean "me" as in:

"Mummy take you"

meaning:

"Mummy's going to take me."

The word "he" was only used rarely and he did not use it to refer to himself.

His confusion of "you" and "me" appeared to be purely a language difficulty and not a confusion about personal identity. He never referred to himself as "Cunny" or to the experimenter as "Jimmy".

DISCUSSION

Over the five years the following features described by Kanner as occurring in autistic children's language were found in Jimmy's speech.

- (1) There was less speech giving information or communicating meaning to others, than in normal children with the same mean sentence-length.
- (2) There was more immediate repetition of his own remarks or the experimenter's, although delayed repetition was rare.
- (3) Affirmation was indicated by the repetition of a question. (Except in the fifth year of observation, when he started to use "yes".)
- (4) Personal pronouns were reversed (e.g. he used "me" to mean "you").

In addition his language showed the following persistent features which have not been mentioned by Kanner:

- (1) Sentences were more often grammatically incomplete than with younger children of corresponding sentence-length. His ability to construct grammatical sentences seemed impaired.
- (2) There appeared to be some difficulty in understanding speech.
- (3) He scarcely ever asked questions (a finding which agrees with Wolff and Chess (1965), who found a reduced number of questions in their schizophrenic group).
- (4) There was a general shortage of all kinds of pronouns.

The improvement in length of sentence and variety of words shown in the first six months of observation was not maintained. His speech remained between the 24 and 30 months level, in spite of the fact that he was receiving regular individual play therapy.

We may conclude that he has a persistent language difficulty, affecting both his

understanding of speech and his ability to express himself in grammatical sentences. Play therapy, although it may have resulted in his starting to speak, did not produce a continued improvement in his language. A course of language training is being planned for him.

SUMMARY

Observation of an autistic child over five years showed an initial advance in his use of language, soon after he started to speak, followed by 4 years when little progress was made. There was a relatively large amount of speech used for other purposes than communication, repetition being particularly frequent. There was difficulty in constructing grammatical sentences, in mastering personal pronouns, and some difficulty in understanding.

Acknowledgements—I should like to thank Dr. W. J. B. Rogers for allowing me to make these observations on a child under his care. I am also very grateful to Mrs. C. Dixon, Mrs. V. Colwell and Miss D. Manley for their assistance in making the observations and to Dr. A. C. Tait, Mr. J. Drewery and Mrs. D. Ledger for their help in preparing this article.

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CRITICAL NOTICE

- (1) **The Montessori Method** (1964, pp. 377) (first published 1912).
- (2) **Spontaneous Activity in Education** (1965, pp. 355) (first published 1917).
- (3) **The Montessori Elementary Material** (1964, pp. 464) (first published 1917).
- (4) **Dr. Montessori's Own Handbook** (1964, pp. 121) (first published 1914). MARIA MONTESSORI. Robert Bentley Inc., Cambridge, Mass. \$6.50, \$6.50, \$8.50 and \$5.00 respectively.

A REVIVAL in the United States of interest in the work of Dr. Montessori has led to the re-publication of the above four volumes, described by her publishers as containing the "four basic texts" for her insights and methods. These volumes (referred to below as (1), (2), (3) and (4) respectively) afford a very useful opportunity for a fresh look at her work; but the outcome as far as I am concerned is, I fear, mainly negative.

And this although I set out from a common platform with her. I believe that most of her searing critique of traditional pedagogy is justified, and I begin, just as she does, from the belief that education should be centred in the child and should offer a maximum of free scope for his own native powers of growth. It is because of Mme. Montessori's vigorous and eloquent proclamation of these principles that she has been widely accepted as one of the main modern flag-bearers of progressive education. (So much so that the late Susan Isaacs actually began by calling her school in Cambridge a "Montessori" one—though this did not last long, for the reasons referred to below.)

However, Montessori's books show that she also started from a number of other firm beliefs which carried her in a totally different direction from that of most English progressive educationists, and indeed, as it seems to us, a long way back towards the very yokes from which we have been so anxious to free children. Nevertheless, she states what she holds to be a conclusive case for her views, and the real question therefore is how far this case can stand up to careful and as far as possible objective re-examination.

As one reads the books, one is struck immediately by a number of untenable pronouncements, inconsistencies, and even wild statements; but putting all these on one side, I think that the positive case for her own distinctive views can be fairly summarized as follows:

After a professional medical training, she started on remedial work with defective children, and found in the ideas of Séguin and Itard an inspiration which she was able to carry much further, and which allowed her to bring her sub-normals to the educational level of average normal children in the Italian schools of the early 1900's. She therefore reasoned that if the methods she had developed could achieve so much even for seriously defective children, what might they not be capable of doing for normal ones?

She found an opportunity of trying these methods out, and they worked. They differed radically from those practised in the ordinary schools, because they started from the child, and above all because their main criterion of effectiveness lay in carrying the child with them. He was given things to do, one after another, which he visibly enjoyed doing, but which at the same time trained him and carried him forward. In particular, these things to do consisted of materials and occupations which themselves halted him if he went wrong, but in turn readily permitted him to get himself right again.

Thus Montessori arrived at the conviction that everything which we wanted children to learn—reading, writing, arithmetic and all we normally mean by education—could be put into forms which truly responded to the child's own needs and strivings, and were thus inherently able to lead to joyous, yet disciplined, progress. In the light of her work with children from three years onward she held that this was the right age to begin; but first of all with what she regarded as the all-important "training of the senses": in every sort of discrimination, serial arrangement, classification, and so on. After that, but before very long, the accepted school subjects of the three R's, etc., could follow, but always by the same road of each individual child's own activities and mounting self-correction and self-education. Thus, as she saw it, her "Montessorian" method simply consisted in giving to each child the kind of nutriment which his freedom needed in order to turn into self-propelling growth.

But what must here be noted is that however sharply the foregoing differs in *method* from conventional education, it fully accepts the latter's *assumptions and aims*. In fact it seeks to apply these from an even earlier age. Its most novel contribution lies in the preliminary early sense-training phase; but what is gained from this, as Montessori emphasizes over and over again, is not merely senses trained in all the above ways, but also the invaluable habits of discipline and obedience. These are indeed just what the conventional objectives of ordinary education need and normally rest upon. But whilst in the regular course they have to be vigorously *enforced*, Montessori claims that by her method and her early start she turns them into the natural pattern of the child's own life. It seems indeed as if these results of her method are those which she personally values most.

And so we come to the clear parting of the ways. All the above stands in diametrical contrast to both the aims and the methods of most progressive educationists in this country. It is not of course possible here to argue out this contrast, but only to note its existence and consequences. We begin, like Montessori, by focusing on the individual child and insisting that only he can really ensure his education. But we start from a quite different child psychology, a different child, a different way of education, and we end up with radically different results. For us 'sense training' is something superficial and relatively extraneous, which replaces the whole child by a small peripheral fraction of him, whilst 'discipline and obedience' are merely ways of making this radical deformation chronic. Children from the very beginning are individual selves and agents, doers and sufferers, in constant interaction with the world—human and physical—around them. They have on the one hand their intensely dramatic and fateful affective history, yet on the other also their cumulative intellectual story of actively exploring and manipulating their world, experimenting and effect-producing within it, learning about it and psychically building up its pattern. These are the ways in which all the time the process of living shapes them, but also by which they educate themselves. We, however, can vastly aid them in strengthening all the self-educative forces in themselves, thus enabling them to develop into independent individual personalities who can achieve constantly growing experience and understanding, skills and powers.

This kind of picture (which obviously owes much to both Freud and Piaget) necessarily points to an entirely different world from Montessori's, one quite incompatible with accepting hers, or practising her ways. But there remain of course her claims to those very remarkable results in her own world. If, by adopting her methods, they could be reproduced at will, those who continue to accept the assumptions and aims of conventional education would have a radical challenge to ponder. But even so there would still be the inevitable question how much Montessori's results owe to her personality (and personal influence over her close associates), and how much to her method as such. She certainly had the advantage of immense sympathy with the children she handled, and far higher standards of consideration than they were used to, but at the same time the firmness of someone who knew what she wanted and was determined to get it.

This, however, is all beside the point if one *aims* at something different. As Susan Isaacs wrote about Dr. Montessori: "Unfortunately she has given her genius for devising technique to the narrow ends of the scholastic subjects. . . . To us, the direct interests of the child in the concrete processes in the world around him seem far more significant in themselves, and as a medium of education, than knowledge of the traditional 'subjects' of the schoolroom." (Isaacs, 1930, p. 21.) Thus, though the Montessori material was always available at the Malting House School and occasionally turned to, it played only the minutest part in the total life, activities and achievements of the School.

An experienced teacher who had occasion not very long ago to visit several Montessori schools, spoke highly of the dedication of the teachers, but found the schools dull. I quote some outstanding points from her notes: "The stress all the time is on the individual child. . . . Every child is taught separately, and this means that there are long periods when the children sit or stand doing nothing while the teacher attends to one child. Although there is an emphasis on individual teaching, no allowances are made for individual differences and every child is expected to conform to the same pattern of behaviour and learning. There is no opportunity for the child to express himself individually in any kind of work.

Independence. Great stress again is laid on the development of independence in the child. He has to make his own choice of material, and in order to help him to do this the variety and amount of material offered is strictly limited so that he shall not be confused. No teacher is allowed to make

any suggestions as to what he should choose. This meant in practice that amongst the youngest children a great many stood about and did nothing. . . . Although the children are allowed to choose their own material, they are not allowed to use it as they like. They are shown how to use it and must follow those directions. . . . Many children spent all their time wandering round after the teacher.

Creative work. This was practically non-existent. There was a certain amount of painting of patterns and cutting out of shapes in coloured paper. I was told that the children must never experiment with materials. Unless they could produce an end product which was acceptable to the adult, they were not allowed to use the material. They were shown how to produce an object and if they could not do that, they were considered not to be ready for that material and it was taken away. This I considered to be one of the worst aspects of the schools.

Concentration. Except when the children were actually being taught by an adult, they only seemed to give half their attention to what they were doing. This was probably because the work presented no challenge to them. It was too easy.

Social behaviour. There was a good relationship between the teacher and the children, except that they were too dependent on her. Amongst the children themselves there seemed to be very little relationship. Even with the six-year-olds there was no co-operation, no help given to one another, and what exchange there was was largely aggressive!"

These notes can naturally make no claim to be typical of every Montessori School; but they do seem to represent trends and risks inherent in the Montessori approach, and predictable from the basic theory. Dr. Montessori, and some of the disciples closest to her, could probably keep them in check; but they would assert themselves in typical forms as soon as these methods became more widely spread. And the master texts would not help too much to maintain either clear and balanced thought or consistent procedure. Consider the following quotations:

(1) p. 28: "The fundamental principle of scientific pedagogy must be indeed the liberty of the pupil; such liberty as shall permit a development of individual, spontaneous manifestations of the child's nature. If a new and scientific pedagogy is to arise from the study of the individual, such study must occupy itself with the observation of *free* children."—p. 87: "We must check in the child whatever offends or annoys others, or whatever tends towards rough or ill-bred acts. But all the rest . . . must not only be permitted but must be *observed* by the teacher. . . . In our system, she must become a passive much more than an active influence, and her passivity shall be composed of anxious scientific curiosity, and of absolute respect for the phenomenon which she wishes to observe."—p. 88: ". . . It is necessary rigorously to avoid the arrest of spontaneous movements and the imposition of arbitrary tasks. It is of course understood that here we do not speak of useless or dangerous acts, for these must be suppressed, destroyed."—p. 167: "Pedagogy . . . is designed to . . . educate the senses. The method used by me is that of making a pedagogical experiment with a didactic object, and awaiting the spontaneous reaction of the child. This is a method in every way analogous to that of experimental psychology."—(2) p. 102: "It must be remembered that the material of development affords graduated exercises passing from the most rudimentary sensory exercises to exercises in writing, calculating and reading. The children are free to choose the exercises they prefer; but of course, as the teacher initiates them in each exercise, they only choose the objects they know how to use. The teacher, observing them, sees when the child is sufficiently matured for more advanced exercises, and introduces them to him, or perhaps the child begins them for himself, after watching other children more advanced."—p. 104: ". . . the period when the child begins to be 'master of himself' and enters upon the characteristic phenomenon I have called the 'phenomenon of obedience'. He can *obey*, that is, he can control his actions, and therefore can direct them in accordance with the desires of another person."—p. 115: "When invited by a single gesture to come and be measured, they obeyed in a wonderful manner, they evidently felt pleasure in obeying, and internal delight which came from the consciousness of being able to work, and of being ready to leave something that they liked doing, at a summons of something of a higher order."

But what do we really mean by "a development of individual, spontaneous manifestations of the child's nature"? As already noted, the child at say three is already the outcome of three years of continual interaction between the *X* that stands for his original constitutional self and the world around him, human and physical. This process cannot but continue, and the notion that "scientific

pedagogy" of all things demands a teacher passively absorbed in observing "free" children is no better than a chimera. (If she is behind a one-way screen, she is not being a teacher, and even so, the child is constantly reacting to the situation he himself happens to be in.) However, Dr. Montessori is very far from meaning what she says. Whatever tends towards rough or ill-bred acts must be checked, and even useless (to say nothing of dangerous) acts must be "suppressed, destroyed". And in any case the whole point of her pedagogy is that it is designed to *intervene actively* by educating the senses. The method used is moreover that of "making a pedagogical experiment with a didactic object". Oddly enough the *spontaneous* reaction of the child is then awaited, and this is said to be analogous to the method of experimental psychology. But the latter would obviously await the *induced* reaction of the child, and anyway without carefully designed controls would not venture to infer anything from the "experiment". But this is by the way. What is more important is that clearly the supposed pedagogical experiment is, as the next quotation shows, a whole graduated course of training by the teacher from the most rudimentary sensory exercises to writing, calculating and reading. And Dr. Montessori is particularly proud of the extreme and indeed complete obedience to another person which her training produces.

It would be possible to multiply the inconsistencies and contradictions, and to bring in other quotations that make one murmur "do I wake or dream?" (e.g. (1) p. 220: "The whole art of medicine is based upon an education of the senses." (3) p. 9: "It is the children between 5 and 7 who are the word-lovers. . . . And they may be entirely carried away by their ecstatic, their tireless interest in the parts of speech."). However, the outstanding fact is the flat incompatibility of her proclaimed gospel of freedom and spontaneity with her intensely directive doctrine of actual training. And, of course, also the quite untenable pretensions of a would-be "scientific" pedagogy, which in fact has nothing in common with science, but is just another old-fashioned claim to have found the real elixir of pedagogic life, the one true pedagogy. However, all this is not to say that her detailed practical procedures do not still contain much that many working teachers could find useful and suggestive. Her lifelong passionate dedication to the cause of the child is moreover an unquestionable fact, and so, within the limits of her assumptions, is her continuous *rapport* with actual children and feeling for what they will respond to. We can continue to agree with her that "by education must be understood the active *help* given to the normal expansion of the life of the child"—(1) p. 104:—even though we may think of very different modes of help to very different modes of expansion. Furthermore, there should be no two meanings about the following quotations from (4) p. 78: "If we could say: 'We are respectful and courteous in our dealings with children, we treat them as we should like to be treated ourselves', we should certainly have mastered a great educational principle and undoubtedly be setting an example of good education", and again (p. 79): "Kindness consists in interpreting the wishes of others, in conforming one's self to them, and sacrificing, if need be, one's own desire. This is the kindness which we must show towards children."

Only kindness is not enough there must be true psychological understanding too, and by this criterion the main doctrine of the above four volumes does seem to me just to fail.

NATHAN ISAACS✠

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✠Deceased

BOOK REVIEWS

Three Theories of Child Development. H. W. MAIER. Harper Row, New York, 1965, pp. xvi + 314, no price given.

THE AUTHOR, who is a professor of social work, believes that both research and practice must stem from a foundation of theory, and the book is written from this point of view. At the outset he indicates his sources, and makes clear why he selected the psychoanalytic theory of Erickson, the cognitive theory of Piaget and the learning theory of Sears and rejected the theories of others.

In Chapter 2 Maier first gives a brief outline of the assumptions basic to Erickson's theory and then describes the eight developmental stages that form the core of his conception of development. The next chapter follows a somewhat similar pattern in respect of Piaget. After discussing the basic assumptions of Piaget's theory, Maier indicates the developmental theory itself by analysing the course of development in terms of sensori-motor, concrete operational and formal operational phases. Chapter 4 deals with Sears. The author points out the emphasis which Sears puts on reinforcement and secondary-drive (learned) motivation, also the basic assumptions of his theory, and then himself articulates Sears' views on development into three broad phases based on his (that is, Maier's) own interpretation and method of organisation. In Chapter 5 the author considers the similarities and differences between the theories from the point of view of terminology, basic assumptions, course of individual development, and the relevance of each theory to the other.

The nature of the book then changes and in Chapter 6 the names of Erickson, Piaget and Sears do not appear. Rather the author entitles the chapter "The Helping Process". After defining what he means by this he outlines four therapeutic situations: the individual interview, group therapy, working with lay adults involved in the child's problem, and the alteration of a policy or programme in which the child is involved. But the real theme of the chapter is to bring diagnostic and treatment considerations into one field as interdependent and intertwined—i.e. the helping process is viewed conceptually. Finally, Maier considers the theories of Erickson, Piaget and Sears for the work of the professional helper, and from them offers a five-phase spectrum of development inside which he hopes to study the theorists' findings in an integrated way. Moreover the implications of the three theories are considered for each of the four therapeutic situations, and for each of the five developmental phases within each situation.

The author writes clearly although often without much critical comment; yet on the whole, he has carefully interpreted the views of the three theorists to his readers. He has been meticulous in outlining the basic assumptions made in each theory. It is true that one can find some faults. For example, Piaget allows the culture pattern to be more influential in affecting the onset of formal operational thought than Maier allows. But the three theories are dealt with in under 200 pages and there are bound to be some omissions and oversimplifications. In the latter part of the book, however, the author is more speculative, and the earlier and latter parts of the book do not, for the reviewer, fit well together. Although he must be applauded for attempting to develop a conceptual framework for the 'helping process', and for suggesting his five-phase sequence of development, only the future can decide how valuable his efforts will be for the teacher, social worker and psychiatrist in their respective fields.

There are 24 very useful pages devoted to bibliography, further readings, and a list of the works of Erickson, Piaget and Sears.

K. LOVELL

Group Therapy in Childhood Psychosis. R. W. SPEERS. University of North Carolina Press, Chapel Hill, 1965, pp. 186. \$6.

IT IS A welcome relief to read a book on childhood psychosis which is not concerned primarily with theoretical speculations or with the interminable arguments of organicity versus psychogenicity, but deals with the all-important problem of treatment. Certainly various methods of treatment have been reported now and again, ranging from shocking a child out of his withdrawal or into conformity, to interpretation-ridden psychotherapy; and from allowing the child complete freedom, to rigid discipline in a class-room. Too often in these accounts the reader is left in some doubt as to exactly what kind of child was treated, or is uncertain of the details of the methods used, and he may be bewildered by the diversity of the methods for which success is claimed.

The authors of this book leave one in no doubt that the children they treat are severely disturbed, and whether we call it psychosis, autism or schizophrenia, the clinical picture is one which we generally associate with a bad prognosis.

The theoretical basis for their endeavours seems to be the assumption that the psychotic child, predisposed by his constitutional make-up and having the sort of mother he has, finds life a traumatic experience from the beginning. He progresses precariously to the stage of symbiosis, but is unable to move on to the phase of individuation, as any separation is for him associated with extreme anxiety or panic. Nor can he withdraw to a still earlier level of development (autism), because his self-awareness, however minimal, will experience such complete giving-himself-up as disintegration. He thus remains precariously balanced in this stage of pseudo-symbiosis, with a mother who, unconsciously motivated, tends to keep him there. Successful therapy must wean the child away from this need-to happen), and provide at first a similar, albeit non-pathological, symbiotic relationship with the therapist or a group. A gradual breaking-through the autistic defensive barrier would then allow the child to move on to the stage of separation-individuation and beyond.

It is in the description of their work that the authors tell us much that is fascinating, original and of real importance. Their account covers a period of four years, during which 4 psychotic children, aged 3½-4½, were seen twice weekly in a group, one session lasting 3 hr, the other 1½ hr. All the children lived at home and were brought to the hospital just for the sessions. Groups were conducted by the authors with the help of various auxiliary co-therapists. After 13 months, when "group feeling had developed", 4 more children were added, but 2 dropped out after a while. During the third year, the children began to attend a nursery school outside and started having some formal teaching, though this was interrupted for some months when their behaviour again became temporarily too disruptive for schooling to continue. The progress and behaviour of each child individually is described in some detail, particularly in the first two years, and there is also a full account given of group interaction, both with each other and with the therapists.

Concurrently with the children's group, one of the authors conducted a group with their mothers, and nine months later a group for fathers was started. Whilst the mothers' group seemed to have achieved some measure of success and certainly was of clinical interest, the fathers showed little enthusiasm for this venture, a lack of enthusiasm which, one feels, was shared by their therapists.

There can be little doubt that the children improved significantly in their four years of treatment, and the authors show us in some detail how they worked to achieve such improvement. They groped and tried, experimented, and gave great attention to detail. The size of the room, the furnishing, the quantity and kind of toys and many other things are carefully considered. The activities were frequently modified to allow for the children's moods, fears, curiosity and growing awareness. They always followed the child's needs but never let activities become stereotyped. They walked a tightrope between permissiveness and control, and when regressive behaviour was allowed or encouraged, it was accompanied by the necessary support.

There are, of course, shortcomings in this book, some of the theorising is weak and there is too much speculation. The way the material is set out is muddling: there is too much overlap and repetitiveness, not enough continuity. (Why, for instance, does not the chapter describing the third and fourth year of the children's group follow that of the first and second year?) All this may detract from the value of the book; it does not in the slightest detract from the excellent work the authors have done. They have shown us the intricacies of group therapy with psychotic children; they have shown, as Professor Anthony remarked in an illuminating foreword, that "Group psychotherapy of psychotic children is not only feasible and practical, but even desirable".

GEORGE STROH

Speech Disorders: Multisensory Techniques for Remedial Education in Disorders of Speech, Language and the Psychoneural Motor System. SUSANNE DE PARREL (Translated by D. M. KEANE). Pergamon Press, Oxford, 1965. 80s.

THIS book is the work of a dedicated therapist or, as she calls herself, "remedial educationalist" who is particularly interested in speech disorders. She writes as a result of the experiences of a lifetime and with messianic fervour.

In criticizing the book it is worth remembering that acceptance of "therapists" by the medical profession in most western countries is comparatively recent and Madame de Parrel must have spent most of her working life at a time when therapists were not as easily accepted as they are today in this country.

Nevertheless, a number of her criticisms are pertinent, particularly her comments on doctors who fob off parents of children who suffer from dysphonia or retarded behaviour development with the bland suggestion that all will be right when the child grows up.

Madame de Parrel gives very detailed accounts of the methods of treatment which she believes have benefited her patients. Her accounts may give ideas to other therapists which they may find helpful but it is very difficult to evaluate them in view of the polemical style in which they are described and discussed and the lack of clear clinical descriptions of either patients or results.

It is likely that the book has suffered to some extent in translation but even so it is slightly surprising in a book said to deal with speech disorders to find treatments described for "Mongoloid Defectives", "The Perverse Child", "Personality Defects", and "Anorexia". The author writes that when she was faced with a difficult case of anorexia:

"I attempted to acquire an influence over the child by the power of the voice. My patient appeared sensitive in this respect: the spoken word seemed to move her."

"(1) I used this method of approach to make the child carry out very full respiratory movements in the lying position, with controlled expiration."

"The child lies on his back on the floor,

Deep	<i>Very Rapidly:</i> breathe in silently with the nostrils dilated, no sniffing sound;
Inspiration	the abdomen and the whole of the thoracic cage is expanded in one sharp movement.

Deep	<i>Very Slow</i> movement: breathe out through the mouth;
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Expiration	<i>Very Gently</i> drawing the abdomen and the thoracic cage to the sound of the vowel 'a', while the teacher counts slowly from 1 to 20, then 1-25, 1-30, etc. Increase the duration each day.
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This exercise is to be repeated twenty times per day. It should not be practised on a bed, but on the floor or on some other hard surface. The teacher counts the numbers out aloud, articulating clearly."

"(2) Lying flat on the floor, the child raises both arms and legs simultaneously, separates them, brings them together, saying very loudly, 'I simply love hot buns' (One syllable per movement)."

"(3) The same exercise is practised with the child saying twenty times, 'The mayonnaise is simply lovely'. As can be seen, it is perfectly possible to find phrases, like those above, which will stimulate the appetite. The movements should also be varied and made as energetic as possible, in order to induce physical tiredness in the subject."

"(4) The teacher should have handy a roll, bun or some form of cake."

"The child is instructed to go through the motions of chewing energetically but with the mouth empty (this should be timed half a second to the beat). The teacher controls the movement of the jaw, articulating at the same time clearly and loudly, 'You are going to eat this cake' (at least 15 times) pointing to the cake in question."

"(5) Finally the teacher makes the pupil eat the cake, saying 'Chew it well! What you are eating is very good.'

"This phrase should be repeated over and over again, until the last morsel has gone down."

"This technique is almost sure to be successful."

To be fair, the author does say later in this section that "Psychiatric research has led to discoveries in this field", though she does not describe them.

The nomenclature of the disorders of speech described by the author is very difficult to follow and is at times confusing yet there is no glossary, bibliography or index. The publishers may be criticized severely for the lack of these items and also deserve stricture for the fact that the title "Speech Disorders" suggests a comprehensive treatise whereas this book is no such thing; a title such as "Some techniques of therapy for children suffering from speech and other handicaps" might have been long-winded but it would have been more accurate.

T. T. S. INGRAM

Children with Communication Problems. A. WHITE FRANKLIN (Ed.) Pitman Medical Publishing Co. for the Invalid Children's Aid Association, 1965, pp. vii + 125. (Available to I.C.A.A. members only—subscription 10s. plus booklet 5s.)

This is a brief but quite useful introduction to the subject of children with communication problems. It contains the text of twelve short papers presented at a Conference called by the Invalid Children's Aid Association in 1964, together with a verbatim report of discussion at the meeting and an introduction and summing up by Lord Brain. Most of the reporting is anecdotal, but Dr. Kellmer Pringle gives a summary of several research studies of emotionally deprived children (which are described more fully in articles referred to in a list of references); Dr. Michael Rutter quotes some of the findings from his important follow-up study of 63 autistic children first seen at the Maudsley Hospital; Professor Ian Taylor devotes half of his five-page paper to a report of the findings obtained in a survey of young children in three schools which had deaf or non-communicating children as pupils; Sir James Pitman presents a table which has some data about the effects of the initial teaching alphabet in the teaching of reading. Other papers deal with the impairment of language in relation to general development (Professor M. M. Lewis); the development of speech in mentally retarded children (Miss Catherine Renfrew); the diagnosis of speech disorders in children (Dr. T. T. S. Ingram); the diagnosis and assessment of communication difficulties (Dr. Louis Minski); treatment in non-speaking children (Dr. Mildred Creak); treatment at Edith Edwards House (Miss P. Denny); speech therapy for brain damaged children (Miss P. Griffiths), and treatment experience at the Smith Hospital (Mrs. I. Cazes).

Professor Lewis speaks of the neglect of problems of speech and communication in this country. These papers show that some good work is being done, and they introduce the reader to most of the people who are doing it. The main value of the book lies in this. Unfortunately the papers are all extremely short and the book would have been more useful if the discussion had been omitted entirely and the authors asked to expand their pieces somewhat.

JACK TIZARD

Mental Testing in Clinical Practice. MOIRA WILLIAMS. Pergamon Press, Oxford, 1965, pp. xix + 177, 21s.

As the author explains in the foreword, "This short book is intended as a guide for all those interested in the measurement of mental activities in sickness". The five aspects of activity selected for treatment are those most frequently in need of examination—intelligence, personality, speech and language, memory and learning, perception and orientation. Standard tests of assessment are described in varying detail, as well as the more informal and flexible techniques of the interview. The tests selected for presentation have, by and large, been those which the author has herself found useful, probably as good a criterion as any when employed by a clinician with the long experience of Dr. Williams.

The level of treatment is geared to the knowledge of those for whom the volume is intended; thus the tests are "only described with the idea of allowing the reader to become familiar with the material and the procedure involved, and so be able to judge for himself the usefulness of the method". The professional psychologist will clearly find little new information, though some may find this rapid survey of use. Coverage of tests is uneven, and in some instances it is problematic what the

lay reader could gain: for instance, Raven's Matrices is allowed no more than six lines, though fortunately Dr. Williams has been able to devote some four pages to the WAIS. The problem of space allocation is obviously a knotty one, which the author has not altogether solved. As might be expected from the direction of her own interests, the most complete coverage has been given to memory and learning.

The author has been careful to draw attention to the conditions likely to affect the functioning of the individual in all the selected areas, and indicates the necessity for making allowances for these both during testing and in the interpretation of results.

It is not easy to assess the value of this book for the lay reader. The content of the short introductions to the various sections may prove of interest. The emphasis placed on the difficulties and pitfalls of testing gives a fair statement of the problems. The question does arise, however, whether this persistent caution may not produce in the uninformed reader a nagging query as to whether the methods outlined are really of value—a conclusion which Dr. Williams herself would be the last to desire. For professional readers, there is a useful bibliography.

GERTRUDE KEIR

Anorexia Nervosa. J. E. MEYER and H. FELDMANN. (Eds.) (Symposium in Göttingen, April 1965) Georg Thieme Verlag, Stuttgart, 1965, pp. 168. DM 30.

This volume contains 25 papers, most of them in German, some in English, delivered at the above symposium. The medical history of anorexia nervosa is dealt with by Schadowaldt who starts his paper by referring to Sir William Gull's original description in 1873. Neuro-physiological aspects of the control of appetite and food intake are discussed in a paper reviewing experimental work on the role of the hypothalamus and the limbic system, and two other papers deal with endocrine and metabolic disturbances in anorexia. A strict, purely physical treatment regime, using forced tube feeding and phenothiazine, is described by Frahm from Hamburg; the neglect of any psychotherapeutic measures in this regime is surprising and is criticized by several of the participants in the discussion.

Most of the remaining papers are concerned with the psychiatric, psychodynamic and psychotherapeutic aspects of the condition. Hilde Bruch from Houston, U.S.A., differentiates between true anorexia nervosa and anorexia as a symptom of psychoneurotic or schizophrenic illness. She stresses the fact that the mother's failure to let the child recognize and follow her own needs is largely responsible for the patient's abnormal psychological development. In psychotherapy the patient must be helped once more to become aware of her own feelings and impulses. Dr. Selvini from Milan contributes a valuable original paper (in English) describing the phenomenology of the patients' psychological experiences in terms of object relations theory. In her view the patient feels her Self to be threatened by her own body, representing the internalized "bad object", and like Hilde Bruch, she emphasizes the influence of a domineering and over-controlling mother. Treatment is aimed at helping the patient to re-experience "self-sufficiency and power". Fleck, Lange and Thomä from the Psychosomatic Clinic in Heidelberg, after attempting to distinguish different types of anorexia, describe their method of treating their patients in hospital with classical psycho-analysis or analytically orientated psychotherapy. They emphasize the need to combine psychotherapy with medical treatment, including tube feeding under the direction of another doctor, in order to restore the patient's weight. Kay and Schapira from Newcastle discuss the prognosis, and other papers are concerned with anorexia in boys, psychological testing, and social and anthropological aspects.

This publication therefore provides authoritative information on many of the psychological and organic aspects of this serious disorder and will be invaluable to anyone working in the field.

H. H. WOLFF

La Personnalité à Travers le Test de l'Arbre. Numéro Special Annuel (1964) du Bulletin de Psychologie (Two Volumes), 25 fr. Obtainable from Groupe d'études de Psychologie de l'Université de Paris, 17, rue de la Sorbonne, Paris V^e.)

THE Bulletin de Psychologie devoted one of its special annual numbers to a new version of the Tree Test. This, which consists mainly in the drawing of a tree, has been used as a projective technique for the last thirty years. Buck in America and Koch on the continent both published extensive studies about it. Mrs. Stora, working in Paris, presents us with a new technique and new methods of scoring and interpretation. She also includes a scale of affective maturity based on the test, and a historical study of the psychological interpretation of children's drawings.

The child or adult is asked to draw successively, on four different sheets, first: "any tree you like but not a fir tree", then: "another tree", then "a dream-tree", and finally to draw "a tree with his eyes closed". Mrs. Stora assumes that each of these trees will represent a different sphere of the child's affectivity: his remote environment will be expressed in the first tree, his familiar environment in the second tree, the third tree will show his unsatisfied tendencies and the fourth will reflect those past experiences which have not yet been fully integrated. Similar sweeping and unverifiable assumptions mar the whole book.

The author has drawn a list of all the details she has noted in numerous trees pencilled by children and adults. This list is reduced to about 120 "constellations de tracés". These are then compared to a similar number of psychological items culled from many observations made on these same children and adults. The chapter which attempts to show how psychological traits correspond to certain drawing characteristics makes very difficult reading; this is partly because of the obscurity of some of these psychological traits and of the drawing characteristics, partly because the author's interpretations look quite irrelevant. Having read and re-read her methods of comparison I am not convinced that she has in fact established meaningful relationships.

Numerous examples are given as an illustration of the method. Undoubtedly much work needs to be done to demonstrate not only that the judgments and predictions based on such a method of analysis are valid, but also that they could not have been arrived at by direct observation of the child, without the artifice of a tree.

Mrs. Stora does show that certain drawing characteristics appear with varying frequency at different ages. Few of these characteristics present a continuous progression. Some disappear completely after a certain age. Others vary irregularly in their incidence, and it is difficult to draw any conclusions from so-called significant differences obtained between the different age groups. Mrs. Stora then proceeds to draw a composite picture of a child's personality at various stages in his development. This is based on observations by Wallon, Freud, Gesell and Tanner and on her own interpretations of drawings. She never mentions any special drawing skills, and it is difficult to accept the idea that skill plays no part in the pictorial expression of one's emotions or fantasy, particularly after a certain age. However, a scale of affective maturity is the dream of every psychologist, and it would seem that Mrs. Stora's observations could well serve as a basis for the construction of such a scale at least for the youngest age group.

Finally, Mrs. Stora has compiled an interesting historical study of how psychologists and others have interpreted children's drawings.

MARYSE METCALFE

Some Approaches to Teaching Autistic Children. P. T. B. WESTON (Ed.): Pergamon, Oxford, 1964, pp. viii + 74, 7s. 6d.

THIS book consists of a collection of papers in which some of the pioneer workers in the field describe their varying techniques. The editor rightly stresses that all such work is still in the experimental stage. However, it is clear from these articles that the fundamental principles on which all true education is based hold good, namely, it is vitally necessary first to establish a good relationship with the child, and second, to base the teaching programme on the child's displayed interests and aptitudes. Obviously in the particular case being considered the first aim is the more difficult to achieve, and the descriptions of the different methods devised and used by the authors are interesting and suggestive.

A sharp contrast is found between the stated aims of Mrs. Elgar, whose primary purpose appears to be imposed social training, and those exemplified by the League School which attempts first to relieve the child's fears and anxieties. Psychologically the second approach would appear to be the better, although the immediate results of the first might be more acceptable to some parents. A study of the long-term results obtained, coupled perhaps with a controlled experiment based on the two methods, would be constructive.

Dr. Rutter's paper on the medical aspects is both interesting and provocative. It could be argued that his statements are much too categoric for the present state of knowledge, and that some of his arguments are not only debatable but at times appear self-contradictory. In discussing intelligence for example he says on page 66: "Even when he ceases to be autistic his intelligence usually remains about the same", while on page 67 we find: "Also it (intelligence) is not static". Nevertheless this is a stimulating paper and it is to be hoped that Dr. Rutter is planning to repeat his follow-up study with children who have all received special educational treatment, with appropriate control groups. The need for further investigation is clearly indicated by his finding, even on the present series, that the children with the best outcome are usually those who have attended schools where they received special and individual consideration.

To sum up, this is a useful little book which fulfils its stated aim of "giving guidance" to "teachers, parents and other interested people".

B. FURNEAUX

NOTICE

The Seventh International Congress of Rorschach and other Projective Techniques will be held in London, at The London School of Economics, from August 5th-9th inclusive, 1968. The Congress has as its theme "The Projective Approach to the Study of Personality". Simultaneous translation is to be provided. Residential accommodation nearby will be available, as required. Dr. G. B. Barker, Chairman to the Programme Committee, Tooting Bec Hospital, London, S.W.17, invites papers falling within the broad theme of the Congress (e.g. Projectives in diagnosis, prediction, therapy, problems of addiction; in education, child psychology, vocational guidance and family work; social and cultural studies; papers on research and theoretical issues).

General enquiries to the Chairman of the Administrative Committee, Mrs. Celia Williams, 32, Willes Road, London, N.W.5.

CHILDREN IN KIBBUTZIM: THIRTEEN YEARS AFTER*

ELIZABETH E. IRVINE

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INTRODUCTION

THE COMMUNAL settlements (*kibbutzim*) of Israel are agricultural communities of a special kind which have been established at intervals during this century, mostly by groups of young immigrants from European countries, with a smaller number from Canada and the U.S.A. They are dedicated to certain values: "laying the agricultural foundations of the Jewish National Home in Israel; the creation and maintenance in each *kibbutz* of a classless society, with equality of manual and intellectual workers, and of men and women; the creation and maintenance of an educated peasantry; the high estimation of manual work; and the subordination of the individual to the community." (Irvine, 1952.) They are distinguished from other types of settlement by "the complete absence of money in the internal economy of the community, which supplies all members with the components of whatever standard of living it can afford, and demands from them eight or nine hours of work daily at allotted tasks" and by the fact that the family is not the unit of living. "The parents live together, sharing a bed-sitting-room but eating in a communal dining-hall, while each child belongs to a group of children of his own age, with whom he eats, sleeps, learns and plays." (Irvine, 1952.)

Kibbutzim are grouped in a number of federations, each of which has certain distinctive features within the general pattern. Within each federation again the individual *kibbutz* may introduce some further minor variations. Consequently, any statement as to detail is subject to exceptions, although the main outlines of the structure remain clear and definite. Variation in child care practice is found in such matters as who puts the children to bed, how long the nursing mother remains exempt from work, the age-span and size of kindergarten groups, the juxtaposition or separation of living-quarters and schoolroom at certain ages and, if separate, how much of the day the child spends in each.

I had the opportunity in 1950 to visit a number of *kibbutzim* at intervals throughout the year, in order to learn something of their system of child-rearing and its apparent results, and subsequently published a descriptive study (Irvine, 1952). My next visit was in 1963, when I was privileged to participate in an international institute on child development in *kibbutzim* which was organized by the Child Development Centre in New York together with Oranim, the training school for teachers and child care staff which is supported and managed by the three major federations of *kibbutzim*. At this time I visited five *kibbutzim*, but not, unfortunately,

*Based on Chairman's address to the Association for Child Psychology and Psychiatry, November 1963.

any of those which I had known before. A number of papers were presented by *kibbutz* members professionally concerned with the theory and practice of "collective education", a term which includes the total system of child care and schooling. These have now been published along with the discussion, in a book (Neubauer, (Ed.), 1965) from which I shall quote at many points.

THE CHILD IN THE KIBBUTZ

The world of the young child

"Kibbutz children live and are educated in children's homes from the day of their birth" (Golan, 1959). This author describes them as passing at 18 months from an infants' home to a pre-school nursery, from there at 7 to a "children's society" (including school and home) and from 12-18 to the "youth community" (now including school, work and much extra-curricular social activity). Each child is in the care of a nurse/house-mother, known in Hebrew as a *metapelet* (plural *metaplot*). The *metapelet* of the infants' house is a specialist, and remains behind when the group of 4-6 infants moves on. There may be another change at 4 (at which time three of these 4-6 groups will be merged into one, and a teacher will be introduced) or perhaps not till 7.

"During the first year of life, and particularly until the end of the nursing period, the mother participates a great deal in the care of the infant" (Golan, 1959). This participation has steadily increased. For the first 6 weeks she is free to devote herself to the child, and Golan (1959) says she can sleep in a special room provided in the infants' home. I had not heard of this in 1950. At one time there was a rigid feeding schedule, but now demand-feeding is allowed (Ben Israel, 1963). At one time, bottle-fed babies were taken over by the *metapelet*, but by 1959 Golan described the mothers as continuing to give five feeds a day from breast or bottle until 5 months, and then gradually relinquishing one feed after another to the *metapelet* till the child is entirely weaned at 9 months. During this time the mother works a reduced schedule which expands as the number of feeds is diminished. After returning to full-time work, she sees the baby twice a day for the next 3 months (Ben Israel, 1965). Golan (1958) says: "During the first year of life the child is in close and intimate contact with his mother and his care is mainly entrusted to her. Herein lies the basis for the strong emotional bond between mother and child. The role of the *metapelet* during this period is secondary." This seems to represent a change of both theory and practice since 1950, when the *metapelet* took full charge from 6 months, and I met a number of instances where maternal responsibility was being more or less unconsciously undermined. The mother's role seems to be much better supported now.

Golan (1957) states: "During the first year of . . . life, a deep emotional bond is created between him and his mother, and afterwards between him and the other members of his family. The parents' room is a place of prime importance in his life. An undisturbed relationship between the child and his parents is decisive in ensuring his normal psychological and intellectual development. At the same time, there is a strengthening of the emotional bond between the child and his nurse, who *from now on* supplies most of his wants, as well as between him and his age-mates, with whom he lives and is brought up." The phrase I have italicized refers to the second year of life, when the child moves with his group to the 'toddlers' house, as described above,

and is cared for by his second *metapelet*. It is this nurse, and not the mother, who feeds, dresses, washes and toilet-trains the child, and is responsible for social training in general. Meanwhile, the child visits his parents after their work for 2-3 hr daily, during which time they usually devote themselves entirely to entertaining him and his siblings (if any).

Sleeping arrangements

Neither the mother nor the *metapelet* sleeps with the children. There is a rota of special night-watchwomen, provided with an instrument enabling them to hear any crying or calling and reach the wakeful child quickly. In some places, the parents of a group organize a voluntary rota for sleeping in the children's house "to make the children feel more secure", though it is still the watchwoman's task to attend to children who wake. I was told that in some places this was working well, but that in others the parents had disliked it and let it lapse. Kaffman (1961), in a study of 403 *kibbutz* children, found "a very low rate of *pavor nocturnus*", but I met a number of *kibbutz* members who felt there was such a problem. There has recently been a campaign in some *kibbutzim* in favour of having children sleep with their parents from the age of one or three years to twelve or thirteen. The reasons given included the importance of the mother-child relationship according to modern psychology, felt to imply a need to sleep under the same roof "for greater intimacy" and to avoid "a feeling of separation"; prevention of night-fears and insecurity, and "the inadequacy of night-watch arrangements". This campaign had been strongly and successfully resisted by the majority, including the psycho-therapeutic staff of the federation, on the grounds, apparently, that this change would shift the delicate balance of family and community loyalties too decidedly in favour of the family. However, certain *kibbutzim* had in fact introduced this modification even in 1950, though I have never visited any of this type.

Conceptual problems

The family as it exists in the *kibbutz* has always presented teasing conceptual problems. Spiro (1954), using the criteria of family proposed by Murdock (1949), was forced to conclude that the family does not exist in the *kibbutz*, for lack of common residence or (independent) economic cooperation of the parents. However, in a reprinted version of this paper (1960) Spiro expressed himself "not entirely satisfied with a conclusion which seems . . . to ignore (the family's) presence". Since in the *kibbutz* the nuclear family is believed to exist, has a name, and is considered important, the implication would seem to be that any definition of family which denies its existence is too narrow to account for all relevant data, and requires revision. However, it is certainly not easy to account for the *kibbutz* family by means of existing concepts, or to find appropriate ones to represent its roles and processes. A good deal of effort has been invested in attempts to define "what kind of mothering?". Rabin (1958) proposed the concept of "intermittent mothering". Lewin (1965) states: "During the first year of the child's life, the *metapelet* is not a 'mother substitute', but rather a 'mother supplement' . . . Actually, both 'mother substitute' and 'mother supplement' are very unfortunate concepts for the *metapelet*. Nobody is supposed to be, or is able to be, a mother equivalent. There are really *two* emotional

centres for the *kibbutz* infant and child: one is made up of the mother and the family; the other includes the *metapelet* and the group." Segal (1965) went further: "For us, it is not really a question of 'mothering'. *Not only the mother is able to do what we are speaking of* (his italics). As far as the *kibbutz* is concerned, we do not need the term 'mothering' (for which . . . we have no Hebrew word) because we do not want a misleading connotation—namely, that only a mother can do this, and the others are a sort of *substitute*, or *less than a mother*. The point for us is the variety of sources of social and physiological stimulation for the child at the very earliest ages." He referred to the importance of "the constancy of the *metapelet*", but this, as already indicated, can only be said to obtain in the relatively short run.

All members of the Haifa seminar agreed with Lewin that the 'children's house' is not an institution, and were inclined to accept that it does contain "a maternal figure", in the sense that the role of *metapelet* combines expressive and instrumental functions. Eisenberg and Neubauer (1965) have now formulated the useful concept of a collaborative child-rearing programme, in which parents and other adults co-ordinate their child-rearing tasks. This recalls the suggestion of Parsons and Bales (1956) that in respect of the socialization of the latency child "family, school and peer group should, in our society . . . be treated as a single social system, comprising the whole range of the pre-adolescent's significant social participations" (p. 114). If, as I believe, this is a useful way of considering our own arrangements, we might then conveniently say that the *kibbutz* provides the child from his earliest years with the more complex and differentiated system of roles and relationships which we reserve for the child of five years and over (or certain younger children who attend nursery school or kindergarten). This is perhaps the intention of Golan's statement (1958) that "the life of the child of tender age revolves round two centres, the children's house and the parents' room . . . which in the child's emotional experience are but one centre".

While the role of *metapelet* contains some sort of balance of "instrumentality" and "expressiveness" (Parsons and Bales, 1956), the mother seems to be relieved of almost all instrumental functions in relation to the child and is left with a delightfully expressive role. Just what is the balance of expressive and instrumental functions in the role of *metapelet* was the subject of much discussion in Haifa; clearly it must vary considerably according to personality. An attempt was made to present the *metapelet* as being of equal emotional importance as the mother, but this did not stand up to challenge. Alt (1965) said: "If I thought that the *metapelet* was the principal mother figure, I should be much more concerned about young children in the *kibbutz* than I am. This second mother figure, who may be described as an 'auxiliary' mother, is not permanent" (see above). Ilan (1965) added: "Throughout, the mother is the main figure, the *metapelet* only a supplementary figure." He also claimed that the mother now plays a less specialized and less idealized role. "The *kibbutz* has gone a fairly long way in letting the mother play an important role during the first year of the infant's life: some fifteen years ago, things looked very different, but now the mother has ample opportunity to frustrate the child" (p. 122). Ilan (1965) also stated on the basis of therapeutic material that the *metapelet*-figure in the child's inner world has a shadowy quality, but suggested that this internalized figure may in some ways be fused with the mother-image and in others serve as scapegoat,

carrying the split-off bad aspects of an idealized mother. Segal (1965) replied: "Well, perhaps it is shadowy—in one sense. After all, we do not want it to penetrate too deeply into the child's personality, since it is a changing figure; but we do want a *general sense of the metapelet* as a representative of our culture" (pp. 119–120).

The father's role

The role of the father received remarkably little attention during the seminar, although Kaffman (1965b) interjected: "I feel that something is missing here; the important role of the father. Very often, babies look to their fathers even more than to their mothers (I am talking about infants in the second half of the first year). This is not surprising: the fathers spend a lot of time with the infants, they take care of them, etc.; at times, they even replace the mothers." No-one disagreed, but the point was not pursued. It seemed to me in 1950 that the roles of father and mother were barely differentiated. "The parents are free to be as affectionate and indulgent as only grandparents can be in cultures where parents have to check these tendencies to some extent in the interests of social training. . . . The status and attitude of mother and father are indistinguishable, the father being in no sense head of the family, and the attitude of fathers to their children often calls up the adjective "maternal" to the mind of an observer. In spite of this, and of the scrupulous equality of the sexes, the father seems to remain a hero-figure to the child." Children boast of the importance of their father's jobs, their prowess in warfare and in defence of the *kibbutz* against Arab marauders (Irvine, 1952).

Even in the discussions on adolescence at the Haifa seminar, the parents were usually mentioned collectively. However, in a special discussion group about adolescents, ambivalence was said to be created for the boys "when they shift from idealization of the father, during their earlier years, to looking upon their fathers as 'ordinary mortals', as the boys take their place as members of the *kibbutz*, and become daily partners with their fathers in . . . work and decision-making activities." (Biber, 1965.)

The young child and the social system

At this point it might be interesting to consider the situation further in relation to the theories of socialization and personality formation of Parsons and Bales (1956). These authors maintain that the child must first internalize a two-role system of social interaction before he is ready to perceive and internalize the more complex social system of parents and possible siblings. The *kibbutz* child at one time developed in a system where the *metapelet* was presumably the object of his "oral dependency", and his mother the main object of a more diffuse affective dependency or attachment. In present conditions the mother will be during the first year of life the object of oral dependency as well as the major affective attachment. Kaffman (1965) states that already at 2 months infants respond more to the mothers than to the *metaplot*—"they even smile differently". So at 9 months the child is weaned simultaneously from breast or bottle and from the mother as "feeding person" to the *metapelet*, a person towards whom he already has a degree of instrumental dependency and diffuse attachment. Parsons and Bales (1956) hypothesise that as the child differentiates himself from a primary "mother-child identity" he becomes aware of

himself and his mother as a "we", distinguished from the "they" of the rest of the household. On this reasoning, the *kibbutz* child, as he learns to distinguish people, is involved in two "we's" (mother-child, *metapelet*-child), each containing a partner who in relation to the other is included in "they". This is the kind of complexity with which these authors imply that the child is not ready to cope until he reaches the oedipal phase. However, they also suggest (Parsons and Bales, 1956, pp. 81-82) that the child avoids coping until he is ready, by failing to distinguish the two parents very clearly. Be this as it may, there are various hints that the *kibbutz* child may not fully distinguish his two maternal figures. If lonely, he is always heard crying for "mother"—but many children also often call the *metapelet* "mother" by mistake. The child crying for "mother" is comforted when the *metapelet* appears, and it may well be that he is crying for "mother-or-metapelet". This would also account for the shadowy nature of the internal *metapelet*-image mentioned above. On the other hand, some material was presented at Haifa which suggested that the toilet-training *metapelet* may become internalized as a super-ego figure—the one who (even in absence) "will be angry with me when I soil" (Hurwitz, 1965).

Theoretical questions concerning mental health and personality development

To sum up at this point, we have seen that, though not "separated" from his mother in Bowlby's (1951) use of the term, the young child in the *kibbutz* has a limited daily contact with his mother, complemented by the attentions of a second maternal figure. No material is at present available about the degree of attachment towards the *metapelet* which is established during the first year of life, or the extent of distress manifested on leaving her care. Important attachments are undoubtedly established towards subsequent *metaplot*, who are periodically replaceable in respect of child care functions and close personal contact (though they retain a certain proximity as members of the village community). Many Western psychologists have expressed doubt as to whether these conditions would be favourable for mental health and personality development. To re-formulate the problem in the terms of Parsons and Bales (1956), the young child in a *kibbutz* finds himself from the start in a social system which contains two maternal figures, one permanent, with a preponderantly expressive role, the other relatively impermanent, in whom the instrumental functions are concentrated (although her expressive functions are by no means unimportant). This system is further complicated by the presence of a father whose role (after weaning) is barely distinguishable from that of the mother. On theoretical grounds, again, we might wonder whether exposure to so complex a system might not be premature for the infant. The *kibbutz*, on the other hand, regards its total system of child-rearing (known as "collective education") not as any sort of *pis aller*, but as a superior model. Lewin (1965) stated: "Collective education has . . . proven that the existence of more than one image in infancy is not only not harmful for personality development but, on the contrary, may be a very important psycho-hygienic factor. Identification with the mother alone is a scientific abstraction; it never existed in reality" (p. 70). He mentions the contribution in other systems of relatives, neighbours, and baby-sitters, and quotes Margaret Mead to the effect that "adjustment is most facilitated if the child is cared for by many warm, friendly people" (Mead, 1954). Belief was expressed in the buffer function of the

multiple object-relationship to neutralize or attenuate pathogenic influences which might be active in the child's relationship with any one of his objects; that a gratifying multiple-object relationship with stable objects might serve as a supportive influence to counter-balance pathogenic conflict in any one direction. It was also suggested that the very satisfactory relations reported between adolescents and their parents was at least partly due to the freeing of the parents from confronting their children during their pre-school years in "conflict-arousing situations such as habit-training" (p. 10). The satisfactory character of parent-adolescent relations has been confirmed by Rabin (1960) and any method which produces such results is worthy of serious attention, but there were some indications that crude splitting of positive and negative affect between mother and *metapelet* were being rather naively approved and encouraged. This again would make one uneasy about the ultimate effects on mental health and personality development.

Quality of early child care

We cannot consider the effects of rearing children in this, or any other social system, without reference to the quality of child care provided, especially in the early years. I felt in 1950 that the care of the pre-kindergarten child left much to be desired. Golan (1958) himself criticized the management of infants at that date: "The most problematic period in the life of our children is the one immediately after weaning—from the ninth month up to the eighteenth. The child at this time has special psychological needs, and these have not yet been fully grasped by the *metaplot*, who continue to treat weaned children as though they were infants." He complains of undue confinement of these children in small play-pens, restricting early attempts at locomotion, lack of suitable play material, and deprivation of adult company due to absorption of the *metaplot* in domestic tasks. The child's physical needs were well served, but through ignorance he was often deprived in respect of his emotional needs. Golan describes children throwing any toys they had overboard, and then resorting in their boredom to auto-erotic activity and to mutual aggression. He adds: "In recent years a systematic campaign to improve conditions has been carried on, and its beneficial results are already beginning to be felt. Experience shows that if suitable equipment is available which allows the child considerable freedom of motion, and if the *metapelet* has more free time for her four children, then the results are satisfactory. Nevertheless, this period in the child's life is perhaps one in which his development is somewhat delayed."

Golan's picture is somewhat blacker than mine (Irvine, 1952). On the other hand, he describes this period of unintentional neglect as ending at 18 months, whereas I felt there were signs of inadequate child care right up to the time of entry to kindergarten. In the second 18 months of life, the child certainly had more freedom of movement, and *sometimes* more adequate equipment—although many groups of this age seemed to have very old and battered toys, obviously staled by familiarity. But even those with good equipment seemed listless and apathetic and unable to make much use of it during the frequent periods when the *metapelet* was absent, as described above. I observed in these children the runny noses so often associated with deprivation, and a great deal of thumb-sucking. Their ready response to my presence did not suggest the 'affect-hunger' of the severely deprived

child; it seemed closer to the 'indiscriminate attachment' described by Schaffer and Emerson (1964) as preceding the more exclusive mother-attachment. (I would rather call this an indiscriminate need for adult company, since 'indiscriminate attachment' seems to me a contradiction in terms.) The children were clearly attached to their mothers, and often explicitly cried for them, but distrust of strangers seemed to be absent, and the attachment to familiar figures less exclusive than one would expect in our own society.

Pre-kindergarten children observed in 1963 seemed to be much better cared for than those I saw in 1950. The group had been reduced from six to four, and the equipment seemed much better. I did not see any children without a *metapelet* close by, and none were looking apathetic and idle. They were all busy and happy. It is possible, however, that some of the places I saw were above the general standard. It would be an interesting research project to test the hypothesis that the signs of deprivation mentioned are related to the quality of child care more than to the partial separation from the mother; but it seems unlikely that any *kibbutz* would allow itself to be used as an example of sub-standard care!

Symptoms and psychopathology

As we have seen, students of child development outside Israel have been inclined to expect a greater amount of emotional disturbance among *kibbutz* children than is found among children reared in their own families, while the practitioners of collective education originally expected a lower level of such disturbance. "They had hoped that the transfer of motherly care and socialization from the emotion-packed atmosphere of the family . . . would eliminate essentially pathogenic factors" (Nagler, 1965). Kaffman (1965a) reports an incidence of 12 per cent to 15 per cent. I think we can accept his argument that these figures are much complete than our own, on account of the systematic observation of children in the *kibbutz*, and the generous provision of remedial education (or educational therapy) for children with learning problems and minor psychological difficulties, which encourages the 'ascertainment' of such children.

Golan (1958) quoted Kaffman's longitudinal study of 403 *kibbutz* children (subsequently published in 1961) as finding that the only symptoms to exceed the incidence reported from more conventional societies were bed-wetting and thumb-sucking. He denied that lack of full maternal care was a factor, and attributed the facts to the avoidance of "all pressure and intervention" in the training of instinctual drives (together with early weaning in the case of thumb-sucking). At that time the failure to raise the children some hours after bed-time was accounted a virtue; but Kaffman (1965a) attributes enuresis in the first 6 years to "faulty training", possibly combined with inconsistency, on the part of the *metapelet*, who "may be responsible for as much as 50 per cent of the enuretic children" (Kaffman, 1965a). In one *kibbutz* where he had advised the *metaplot* on training methods, enuresis had been reduced from 13 per cent, "the usual figure for children after the age of three and a half, to practically zero". "Later on, we can see the role of the parent-child relationship in the fact that the enuretic child goes on being enuretic, despite the fact that its early toilet-training was performed by a so-called 'neutral' person" (Kaffman, 1965a). There seems to be some special pleading or question-begging here. However,

Kaffman reported the incidence of thumb-sucking as 41 per cent among *kibbutz* children aged 3 to 9, and recognized this as two to three times as high as that reported for corresponding samples of American children. He suggested that this was mainly due to the permissiveness or tacit encouragement of most *kibbutz* educators, and reported that in one *kibbutz* with 150 children in this age range, the incidence has been reduced from 30 per cent to 16 per cent by a less indulgent approach.

Nagler (1963) gives a lower overall figure of 10 per cent, probably because his figures are based on the intake of a child guidance clinic for *kibbutz* children, while Kaffman's include minor cases dealt with by less specialized methods. Nagler (1963) mentions the excess of thumb-sucking, "and fewer feeding problems. There do not seem to be differences worth mentioning in the distribution of enuresis, learning difficulties, aggression and anxieties. . . . We find relatively few cases of delinquency and almost no manifest homosexuality among boys. There is no lack in our material of any of the usual clinical categories, among which 'behaviour disorders', 'behaviour disorders with neurotic trends', and 'pre-neurotic states' are the most frequent." (Nagler, 1963.)

Nagler concludes that the aetiology of these disorders is found far more often in the family than in the children's house. One might ask whether some of these families might have functioned better in a family-centred system, but it is quite possible that many of them would have functioned worse, since the *kibbutz* provides in many ways a very secure and supportive environment. Oedipal conflicts have not, as had been optimistically hoped, been eliminated or even much reduced by *kibbutz* sleeping arrangements and, as elsewhere, they often prove unmanageable when the marital relationship is disturbed.

In so far as the children's house is found to contribute to emotional disturbance, Nagler (1963) mentions failures of early child care, both in terms of too frequent changes of *metaplot* in the early years, lack of privacy for the nursing couple, with distraction of mother and baby, and over-strict feeding-schedules (now obsolescent). Some problems are attributed to pedantic and obsessional *metaplot* (of whom the older ones may well have been taught rigid habits now no longer promulgated). One of these is said to have produced enuresis in 70 per cent of a group of 7-8-year-old children. Rivalry between *metapelet* and mother is also found to be pathogenic, and attributable to the psychopathology of one or the other. My impression was that the social structure was conducive to such rivalry; it would be interesting to know how the incidence compares with that of pathogenic degrees of rivalry between parents outside the *kibbutz*. Nagler mentions the lack of professional distance of educators and parents as conducive to friction; mother and *metapelet* may be old rivals or enemies before the question of cooperation over the child arises. On the other hand, Eisenberg and Neubauer (1965) emphasize the importance for the *kibbutz* child of the shared value-system of parents and educators, through which he avoids the culture-conflicts of a working-class child in our society with a middle-class teacher. Not surprisingly, the children of educators, who may even see their mothers caring maternally for other children, are somewhat at risk. On the other hand, the child who is for any reason maternally deprived may well find comfort and warm affection in *metapelet* or teacher. *Metaplot* may also counteract the over-

protection of anxious or possessive mothers; but here the risks of rivalry must be very keen, and psychiatric intervention is apt to be required.

Personality development in the kibbutz

It is an advantage to be able to supplement this interesting clinical material with the findings of some social psychological observations. Rabin, of Michigan State University, has carried out a number of investigations on various aspects of development in *kibbutz* children. He published the report (Rabin 1957) of a comparative study of thirty-eight *kibbutz* children aged 9 to 11, with a control group of thirty-four children of the same age group obtained from five agricultural villages with a normal pattern of family life (*moshavim*). Using the Rorschach projective test, he found the *kibbutz* children superior in personality maturity than the controls, and no more homogeneous in personality. Later (Rabin 1958a), he reported on 10-year-old boys from these two settings (twenty-seven subjects in each group). Using the Blacky projective test, he found in the *kibbutz* group evidence of less oedipal intensity, more diffuse positive identification and less intense sibling rivalry. In the same year he published (Rabin, 1958b) the results of two comparative investigations of children in *kibbutzim* and *moshavim* in the age-bands respectively of 9-17 months and 9-11 years. Using, for the infant groups, the Vineland Social Maturity Scale and the Griffiths Mental Development Scale, he found a lower level of ego development in the *kibbutz* infants, mainly due to retardation expressed on the personal-social scale. With the 10-year-olds, on the other hand, the *kibbutz* children showed some superiority on the Goodenough test, and were found to be equal or superior. However, few of these differences attained statistical significance as regards the Rorschach measures of ego factors used. Finally (Rabin 1959), he further investigated the attitudes of children between 9 and 11 towards family and parents, comparing ninety-two *kibbutz* subjects showed clearly positive attitudes towards the family than among the controls. Attitudes towards the father were indistinguishable among the boys of the two samples, and towards the mother among the girls; but positive feeling was shown towards fathers by more control than *kibbutz* girls, and towards the mother by more *kibbutz* than control boys.

It seems therefore that, while not free from pathogenic stress in childhood, the *kibbutz* society is not inferior to our own in the mental health of the young people who grow up in it.

CONCLUSION

Every society imposes certain characteristic stresses on its children (in fact on all its members) to which some of them succumb, while others develop strength and ability in coping with them. I would recall that casualties in the *kibbutz* are not more numerous than elsewhere, probably less so. There is an insidious tendency to compare the practice of another society with the Platonic ideal of our own, rather than with its flawed actuality. Golan (1958) claims that infant mortality in the *kibbutz* is the lowest in the world. No child in the *kibbutz* is under-fed, ill-clothed or overtly ill-treated (though parents may of course be ambivalent or rejecting in subtler ways, as elsewhere). If the parental couple is broken by death, separation or

mental or physical illness, the child is cared for by familiar adults in the familiar setting, and will not lose touch with siblings or playmates. It will be a proud day when we can say that all our children are as secure as this against these major disasters.

Even if we compare the *kibbutz* family with secure middle-class families in our society, rather than with the least secure working-class ones, how many such parents are able and willing to give their children their undivided attention for two hours a day? This is likely to be beyond the compass of the working mother, and the 'week-end father' is not an uncommon figure. Family relations in the *kibbutz* are typically warm and affectionate, and these small villages provide many opportunities for occasional unplanned contact even during the working day. *Kibbutzim* now often contain many extended families; many children have uncles, aunts and grand-parents within reach, and these relatives are distinguished from the main body of 'comrades' and deputize for the parents when they are unavoidably absent. The parents of peer-group members also form a special circle, with some of the properties of the extended family.* Classes are small, especially in the younger age-groups, and this is much more logical than our tendency to have *larger* classes for infants than for adolescents. In these small classes (which become increasingly self-governing) the child is always known and respected as an individual, and is never treated as examination-fodder (a characteristic stress of our own culture). I would say that the *average* level of teaching and enthusiasm of the teachers is distinctly higher than in most of our schools. Every care is taken to give the child as rich and stimulating an environment as possible, and his community is on a scale which can be fully apprehended (not vast and not fully knowable by any individual, like our own). These advantages may well be factors which kept the rate of emotional disturbance moderate even at a time when early child care left much to be desired.

SUMMARY

The social system of the *kibbutz* is briefly described, especially as it affects the young child. Attention is paid to the distribution of parental functions between mother, nurse and father, and the conceptual problems involved in the analysis of this situation. The aspirations of the *kibbutz* movement for the outcome of "collective education" and the misgivings of various Western commentators are confronted with

- (a) clinical reports by two psychiatrists working with *kibbutz* children of the incidence and type of symptoms and psychopathology found in this population;
- (b) the findings of several comparative studies of children from the *kibbutz* and from villages with the family structure traditional in Western societies.

*I saw a young child, whose parents were briefly absent, decide to spend part of his 'family-time' with a friend and his family rather than with his grand-parents; but he eventually rejoined his granny for his bed-time story. Both families adapted readily to the needs of this child.

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THE EFFECTS OF SEPARATING RHESUS MONKEY INFANTS FROM THEIR MOTHERS FOR SIX DAYS

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INTRODUCTION

BOWLBY's (1952) suggestion that a period of separation from its mother may have far-reaching effects on a child's future development has on the whole been substantiated by subsequent studies (Ainsworth, 1962), but many issues about the interacting effects of maternal deprivation remain unresolved. Ethical and practical considerations constrain an experimental approach with human children, but some aspects of the problem can be studied in sub-human primates.

There have been three previous studies of maternal deprivation in macaques. One was concerned with baby exchanges of less than one hour's duration between two mother-infant pairs: both mothers and infants showed extreme emotional responses (Jensen and Tolman, 1962). In the longer-term study by Seay, Hansen and Harlow (1962), two pairs of rhesus infants were separated from their mothers by clear Plexiglass panels for 3 weeks. During 3-week control periods, before and after separation, the infants lived with their mothers but could play together in pairs for 30 min a day. The infants showed extreme emotional distress at separation which decreased over the separation period. The experimenters also describe a decrease in infant-infant social and aggressive behaviour during separation, but their comparisons here are invalid since the time available for play was much greater during separation (24 hr a day) than before or after (30 min a day). During the post-separation period the infants spent more time clinging to their mothers than before separation, but the published data do not indicate how long this lasted.

Since the disturbance of the infants in this study could have been due to frustration induced by the mother's presence in a situation where physical contact with her was impossible, Seay and Harlow (1965) carried out a further experiment involving total separation of eight infants *ca.* 207-days-old for a fortnight. The defect in the design of the previous study was remedied. All infants showed emotional disturbance in response to separation and drastic decreases in play and other complex social behaviour while separated. There was an increase in mother-infant and infant-mother behaviour immediately after reunion, but observations during the next fortnight indicated that the effect on the mother-infant relationship was "transient and apparently unimportant".

The present study is concerned with the effects of a 6-day period of maternal deprivation on the behaviour of four 30-32-week-old rhesus monkeys (*Macaca mulatta*). The procedure differed from that adopted in the previous studies in that the animals lived, not separately in small laboratory cages, but in a more complex group

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situation, and we attempted to obtain more extensive pre- and post-separation data. Separation involved complete removal of the mother, the infant being left in a social and physical situation unchanged except as a consequence of the mother's removal. The data have previously been reported briefly elsewhere (Hinde, Spencer-Booth and Bruce, 1966).

MATERIAL

The four subjects (three female, Linda, Doris and Hilary, and one male, Tim) had lived since birth in groups each consisting of an adult male, three or four females, and their young. The groups were housed separately in outdoor cages (18 ft \times 8 ft \times 8 ft), each communicating with an inside room (7 ft 6 in. \times 6 ft \times 4 ft 6 in.; see Hinde and Rowell, 1962). Eight control infants, similarly housed, were given no separation experience.

PROCEDURE

Observations were made during the following periods:

(i) *Pre-experimental period.* Routine watches were done between 09.00 hr and 13.00 hr, for 6 hr a week from birth to 8 weeks, and for 6 hr a fortnight thereafter. Various aspects of infant behaviour and mother-infant interaction were recorded on check sheets ruled in half-minute intervals, and qualitative notes were made on blank paper (see Hinde, Rowell and Spencer-Booth, 1964, for further details of procedure).

(ii) *Experimental period.* (a) *Pre-separation period.* When between 30 and 32-weeks-old, each infant was watched on two or three of three successive days, starting at 10.00 hr. The routine data were collected as in (i), while in addition the infant's activity while off its mother was recorded. For this purpose the cage was considered as divided into sixteen boxes formed by eight squares in the horizontal plane, and upper and lower components in the vertical. The number of boxes entered in each half-minute, and the activities performed there, were recorded on check sheets. The watch was continued until the infant had been off its mother and off any other animals in the group who might carry it (i.e. males or "aunts") for a total of 2 hr, or until 14.30 hr, whichever was the earlier.

(b) *Separation period.* At 10.00 hr on the next day (Day 4 of the experiment) mother and infant were caught. The infant was released immediately, while the mother was transferred to an indoor laboratory cage 3 ft \times 3 ft 6 in. \times 3 ft 10 in., out of sight and 60 yd away from the infant. The infant was watched as in (a) on this day, and also on Days 5, 7 and 9.

(c) *Post-separation period.* At 10.00 hr on Day 10, the mother was returned. The mother-infant pair was watched by two observers as in (a) until the infant had been off mothers and aunts for 2 hr or until 14.30 hr, whichever was the earlier. This procedure was repeated on Days 11, 12, 14, 16, 23, 30, 37.

(iii) *Post-experimental period.* Routine watches were continued as in (i) for 6 hr every 4 weeks (the 6 hr all being done in one week) until the infants were a year old.

(iv) *Tests.* In addition to the above, the infants were subjected to certain "personality" tests during the pre-separation period, on Day 5 and on Day 37.

(v) *Control animals.* Routine watches were carried out on the eight control animals,

each mother-infant pair being watched for 6 hr a week for the first 6 weeks, for 6 hr a fortnight until they were 6 months, and for 6 hr a month thereafter.

Three observers were involved in the separation experiment. All observers were extensively trained beforehand, but the categories of behaviour used were so clear-cut that inter-observer differences were negligible and an assessment of inter-observer reliability unnecessary.

RESULTS

Pre-experimental period

Examination of pre-experimental data indicated that the behaviour of these infants was not markedly different from that of other group-reared infants in the colony. For example the proportion of half-minute periods in which they were recorded as being off their mothers during the pre-experimental period, lay fairly close to the median for eight control animals which were not subjected to a separation experience (Fig. 1). The data for Linda were above the median in fourteen of the 6-hr watches and on or below in 4, and the corresponding figures for Doris, Hilary and Tim were 16 and 3, 12 and 4, and 6 and 14 respectively.

Individual differences in the pre-separation period

Full understanding of the effects of the removal of the mother first requires consideration of the previous individual differences in behaviour between the infants. The percentage of half-minute periods in which each was recorded off the mother decreased in order from Linda, Doris, Hilary to Tim, and the time spent on their mothers with their eyes shut increased in the same order of individuals (Table 1 (a) and (b)). The generally higher level of Linda and Doris, as compared with Hilary and Tim, had been maintained for some weeks (Fig. 1), but within each of these pairs the difference was more recently established. Although differing little in the amount with which they were on the nipple with their eyes open (Table 1 (c)), they were, in the same order, on their mothers but not on the nipple, less (Table 1 (d)). Thus those animals which were off their mother least were also the ones which slept on their mothers most, but spent less time on them with their eyes open.

Differences between time spent off the mother could be due to differences between mothers or infants or both: these possibilities can be distinguished as follows. When the infant was off the mother, we recorded in each half-minute when it was within 2 ft of her and when it was more than 2 ft from her. Furthermore we recorded whether changes from more than 2 ft to less than 2 ft ("approaches") were due to the initiative of the mother or the infant, and similarly for "leavings". Now, *a priori*, a smaller time off which is due primarily to a greater tendency for the infant to seek proximity with its mother would be associated with a larger percentage of approaches due to the infant ($\%A$), with a smaller percentage of leavings due to the infant ($\%L$), and thus with a larger value of $\%A - \%L$; while a smaller time off due primarily to the mother's behaviour would produce the opposite results. Thus $\%A - \%L$ can give an indication of the extent to which a change in time off the mother is due to the behaviour of one or the other: it is largely independent of their differing locomotor ability. That the

TABLE 1. SUMMARY OF MEASURES OF MOTHER-INFANT INTERACTION

		Pre-separation								Post-separation							
		Days 1-3 mean				Day 10				Days 11-16 mean				Days 23-37 mean			
		L	D	H	T	L	D	H	T	L	D	H	T	L	D	H	T
(a)	Total time off	78	65	59	54	56	47	13	3	66	65	33	32	64	77	46	49
(b)	Asleep	7	12	15	16	21	25	22	39	18	11	28	20	18	8	14	13
(c)	Awake on nipple	29	27	33	31	25	31	59	57	26	34	36	51	27	22	48	37
(d)	On mother off nipple	15	14	10	4	21	6	19	6	9	10	15	8	16	11	17	5
(e)	%A-%L	2	7	10	37	23	15	20	50	6	11	14	32	0	29	-3	55
(f)	R	17	9	28	56	0	50	44	50	9	26	24	46	19	52	19	64
$A+M+R$																	
(g)	>2 ft as % T.T. off	80	87	83	93	56	86	61	60	72	77	65	61	76	89	83	82
(h)	>2 ft only as % T.T. off	34	51	46	45	23	45	32	0	37	31	33	12	40	46	41	39
(i)	On and off	26	17	20	8	24	9	26	53	18	19	21	18	28	12	32	7

(a) to (d) The percentage of half-minutes in which the activity indicated was recorded. (e) The difference between the percentage of approaches which were due to the infant and the percentage of leavings due to the infant. (f) The percentage of occasions on which the infant attempted to gain the nipple, or was taken onto the nipple by the mother, on which it was rejected. (g) and (h) The percentage of half-minute periods in which the infant was off the mother in which it was respectively at some time or continuously >2 ft from her. (i) The half minute periods in which the infant was both on and off its mother as a percentage of the total number off. L—Linda. D—Doris. H—Hilary. T—Tim.

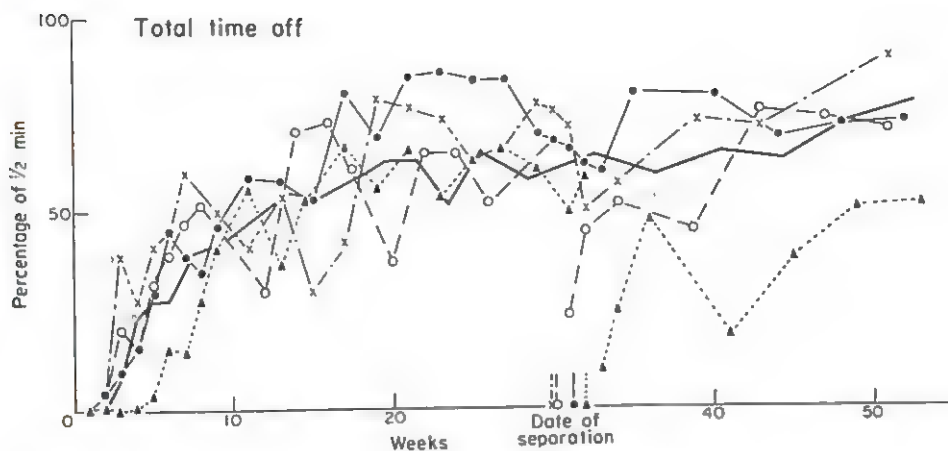


FIG. 1. The percentage of $\frac{1}{2}$ min in which infants were recorded off their mother from 0–52 weeks old. The thick line represents the median for the eight control animals. During the experimental period only the first 2 hr of the watch on any day was used in calculating the data for the experimental animals.

Linda \times — — — — —
 Hilary \circ — — — — —
 Doris \bullet — — — — —
 Tim \blacktriangle — — — — —

order (L, D, H, T) of decreasing time spent off the mother is associated with an increase in %A-%L (Table 1 (c)) indicates that the differences in time off the mother were due primarily to differences between the infants, and less to differences between the mothers.

When the infant approached the mother and attempted to take the nipple we recorded whether it was accepted (A) or rejected (R) by the mother. We also recorded the occasions in which the infant was taken onto the nipple on the mother's initiative (M). The percentage of the sum of all attempts to gain the nipple, and pickings up by mother, in which the infant was rejected [$R/(A+M+R)$ %] was calculated. Arguing again *a priori*, a decrease in time off mother would be associated with a decrease in this percentage if it were due to decreased rejection by the mother, and with an increase if it were due to more demands by the infant. The order (L, D, H, T) of decreasing time off mother is correlated with an increase in the percentage of rejections (Table 1 (f)): this again suggests that the differences in time the infants spent off their mothers was related more to differences between infants than between mothers.

These differences could be conveniently summarized by saying that the infants sought proximity to their mother more, in the ascending order Linda, Doris, Hilary, Tim. Consideration of behaviour while off the mother, however, gives a rather different picture. While off her mother Linda went more than 2 ft from her mother less (Table 1 (g)), and spent fewer whole half-minutes more than 2 ft from her (Table 1 (h)), than any of the other infants. Furthermore the proportion of half-minute periods off the mother in which Linda was recorded both on and off her mother (an

TABLE 2. MEASURES OF ACTIVITY, EATING AND PLAY

		Pre-separation mean				Separation mean				Day 10				Days 11-16 mean				Days 23-37 mean			
		L	D	H	T	L	D	H	T	L	D	H	T	L	D	H	T	L	D	H	T
(a)	Mean % $\frac{1}{2}$ min sitting	12	16	18	4	26	39	48	47	11	13	2	69	13	16	19	27	6	16	25	20
(b)	Mean no. boxes/ $\frac{1}{2}$ min	2.7	2.2	2.6	3.1	2.0	2.1	1.6	1.8	1.8	2.0	1.4	2.4	2.7	2.4	2.2	2.0	3.2	3.2	3.7	2.7
(c)	No. periods 2-4 boxes %																				
	No. periods >2 boxes	74	86	77	69	78	83	86	86	88	86	100	88	78	82	86	91	72	69	57	47
(d)	Mean % $\frac{1}{2}$ min eating (whole watch)	36	45	29	23	61	59	39	42	43	39	11	0	42	39	27	14	32	48	16	32
(e)	Mean % $\frac{1}{2}$ min manipulative play	11	12	29	34	4	15	5	1	3	5	0	0	18	19	13	3	25	14	26	9
(f)	Mean % $\frac{1}{2}$ min social play																				
	(i) <i>R</i> & <i>T</i> *	23	3	1	13	0.2	1.5	0.5	1	0.4	3	0	0	16	5	5	0	15	11	12	5
	(ii) <i>A/W</i> †	5	0.1	6	1	0	0	0.1	0	0	0	0	0	2	1	1	0	5	5	3	0

**R* & *T*=rough-and-tumble: play in which monkeys are in physical contact.

†*A/W*=approach/withdrawal: play in which monkeys are not in physical contact.

inverse measure of the lengths of the bouts off the mother) was more (and that for Tim less) than that for the other animals (Table 1 (i)). Thus Linda's behaviour was characterized by frequent short bouts off her mother in which she did not spend much time at a distance from her. She was also more active (in terms both of the mean number of boxes entered per minute and the amount of locomotor activity in those half-minutes in which she was in more than one box (Table 2 (b) and (c)) than any of the other infants except Tim. Linda's high locomotor activity was undoubtedly related to the frequency of her play (Table 2 (f)).

Although Doris, Hilary and Tim were, in descending order, off their mothers less, and spent fewer half-minute periods more than 2 ft from her, they showed in the same order more locomotor activity, more social play and more manipulative activity (Table 2 (e)).

Differences between individuals are of course multidimensional and difficult to summarize succinctly. However, the data show that:

- (a) The infants spent less time off their mothers in the order Linda, Doris, Hilary, Tim.
- (b) Although Linda was off her mother for much of the time, this was in frequent short bouts during which she went far away less than the other three but showed much locomotor and social play activity, but less manipulative play (Table 2 (e)).
- (c) Doris, Hilary and Tim in that order showed more locomotor activity, manipulative and social play while off their mothers.

Changes in infant's behaviour during separation and subsequently

(A) Immediate responses to removal of mother

Removal of the mother produced an immediate change in behaviour in all infants. Within a few minutes they started to give the "whoo" distress calls, accompanied in Doris' case by frequent "geckers" (a harsh call, given also when infants are rejected by their mothers—see Rowell and Hinde, 1962). During the first $\frac{1}{2}$ hr the frequency of whoo calling (mean 6.7 calls/ $\frac{1}{2}$ min) was higher than the pre-separation mean in all 4 animals (mean 0.30). In addition they tended to remain in one place, one of them (Linda) sitting huddled in a corner for $1\frac{1}{2}$ hr, and another (Hilary) remaining on the perches and being unwilling to come to the ground.

During the first $\frac{1}{2}$ hr the percentage of $\frac{1}{2}$ min periods during which they were recorded as sitting (mean 71 per cent) was greater than the pre-separation mean (mean 13 per cent), and the number of boxes entered per half-min (mean 1.7 per cent) less (pre-separation 2.9 per cent) in all animals. Furthermore the animals showed less manipulative play (mean 1 per cent) than before separation (mean 22 per cent). Not unexpectedly, rough-and-tumble play also showed a sharp decline during this first 30 min (2.5 per cent, pre-separation mean 10 per cent).

(B) Whoo calls

These calls are given by infant rhesus when separated from their mothers, and may be intermingled with geckers and tantrums if the infant actually attempts to cling to its mother and is rejected.

In all infants the frequency of these calls on Day 4 (the first day of the mothers'

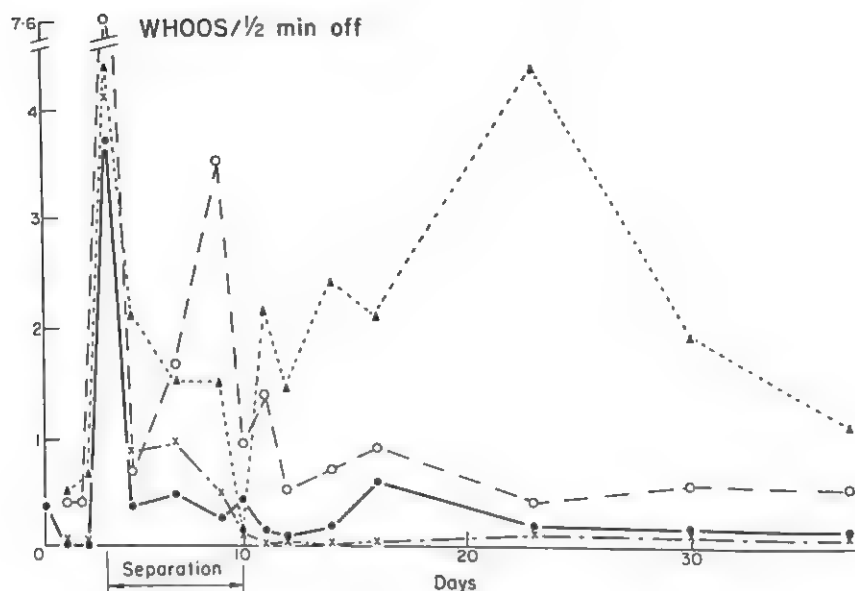


FIG. 2. The mean no. of whoo calls per $\frac{1}{2}$ min of the time spent off the mother during the experimental period.

Linda x — — — — — x
 Hilary o — — — — — o
 Doris ● — — — — — ●
 Tim ▲ — — — — — ▲

removal) was many times higher than it had been during the pre-separation control watches (Fig. 2). Although lower on succeeding days, it remained above the pre-separation mean throughout both the separation and the post-separation periods in all four animals.

(C) *Interactions with aunts and males during separation period and subsequently*

Doris was never recorded on aunts or males at any stage during the observations, and Linda not before separation. Linda, Hilary and Tim were recorded on aunts in a higher proportion of half minute periods during separation than before or after (Fig. 3), and there was a suggestion of a progressive increase during the separation period. Only two of the infants were recorded as asleep on aunts during these watches, Hilary (mean 0.6 per cent) and Tim (10 per cent). The infants thus spent much less time on aunts than they had previously spent on their mothers (pre-separation mean 48 per cent).

These data produce a somewhat misleading picture of the extent of the interactions with aunts. On the one hand the bouts on the aunts were usually of less than one half-min whereas those on mothers were much longer: the percentage of half-minutes recorded on aunts thus produces an over-estimate compared with the data for mothers. On the other hand the infants spent much time sitting touching or nearly touching aunts or the males, and would often whoo or gecker if the aunt moved away. Linda and Hilary, especially, often sat with the adult males, running to them for

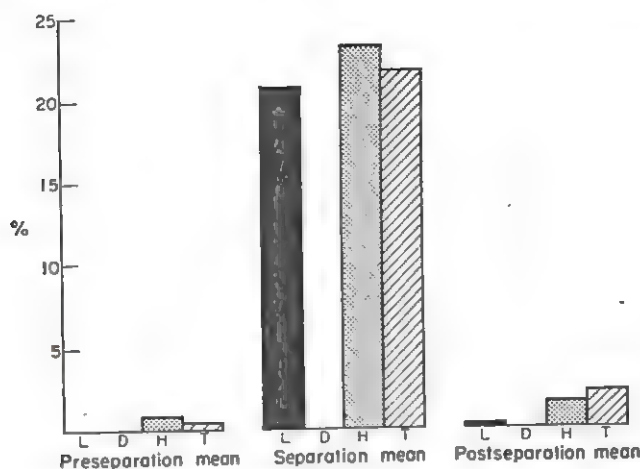


FIG. 3. The percentage of $\frac{1}{2}$ min in which the infants were recorded on adults other than their mother during the experimental period.
L = Linda D = Doris H = Hilary T = Tim

protection, and Linda was actually held by the male in a ventro-ventral position for 9 bouts, one 19 min in duration.

They were also groomed by other animals more during than before separation (mean 1.7 per cent) in all cases, both on the first day of separation (mean 7.4 per cent) and even more over the separation period as a whole (9.4 per cent). This again decreased immediately the mother was returned in all animals (mean Day 10, 0.8 per cent; mean Days 11-36, 1.34 per cent).

(D) Measures of activity during the experimental period

(i) *General.* The data discussed in this section were obtained in the activity watches and thus (except (v) below) refer only to periods when the infant was off its mother. Except where stated otherwise, the only differences cited are those for which all four infants showed similar trends.

In general, the infants' behaviour during the mothers' absence can only be described as depressed. They sat in the hunched, passive attitude of a subordinate animal (Fig. 4). Their lack of activity was revealed in a number of ways, as described below.

(ii) *Proportion of half-minute periods in which the infant was recorded as sitting* (Table 2 (a)). A number of categories of behaviour were differentiated during these watches, one of which was "sitting". An infant was described as sitting when not engaged in any of the other categories used, but either just looking round alertly, or hunched and inactive. "Sitting" became more frequent on the first day of separation. It then tended to decline as the separation period progressed, the mean for the whole separation period being less than that for the first day.

Except for Tim on Day 10, where the data were unreliable owing to the short period spent off his mother (Table 1), the infants sat less during the post-separation period than while the mother was away. Over the post-separation period as a whole



FIG. 4. The postures of infants when moving about and sitting, while separated from their mothers.

this measure was similar to the pre-separation mean for three animals, but for Tim it was persistently higher.

An increase in this measure during the separation period is to be expected since the infants were spending less time on aunts than they had previously spent on their mothers, so that the activity watches must have spanned periods in which they would have been resting on their mothers. That this was not the only factor is suggested by the decrease in the amount of sitting during the course of the separation period—a decrease which cannot be accounted for by the slight increase in the time spent on aunts: this is discussed further below.

(iii) *Locomotor activity*. Two further measures can be used to assess the activity of the infants. The first is the mean number of boxes entered per half-minute (Table 2 (b)). This decreased during the mother's absence, the separation mean being less than that for the pre-separation period (Fig. 5). Furthermore the separation mean for three animals was below that for the first day of separation, and the figure for the last day of separation below the separation mean. Hilary showed little change during the separation period.

After the mother was returned this measure of activity soon rose above the separation level, and was above or persistently near the pre-separation mean 1, 3 and 5 days after the mother's return in three of the infants. With Tim, however, all the post-separation scores (mean 2.4) were below all the pre-separation ones (mean 3.1).

Since the decrease in the number of boxes entered per half-minute during the separation period occurred despite the increase in the proportion of time for which the infants were active (i.e. decrease in time spent sitting (ii) above), the infants must have shown less intense activity during those periods in which they were active at all. We assessed this directly by the ratio of the number of half-minutes in which an animal was recorded in two to four boxes, to the number in which it was recorded in more than two boxes (Table 2 (c)). One animal (Doris) showed an increase in activity (i.e. decreased ratio) on the day of separation which was subsequently maintained, and three showed an increase in activity which was followed by a fall below the pre-separation level. After the return of the mother the ratio at first remained high then fell gradually.

Thus both these measures show that although the infants tended to be active for more of the time as the separation period progressed, they became progressively less active when they were active at all.

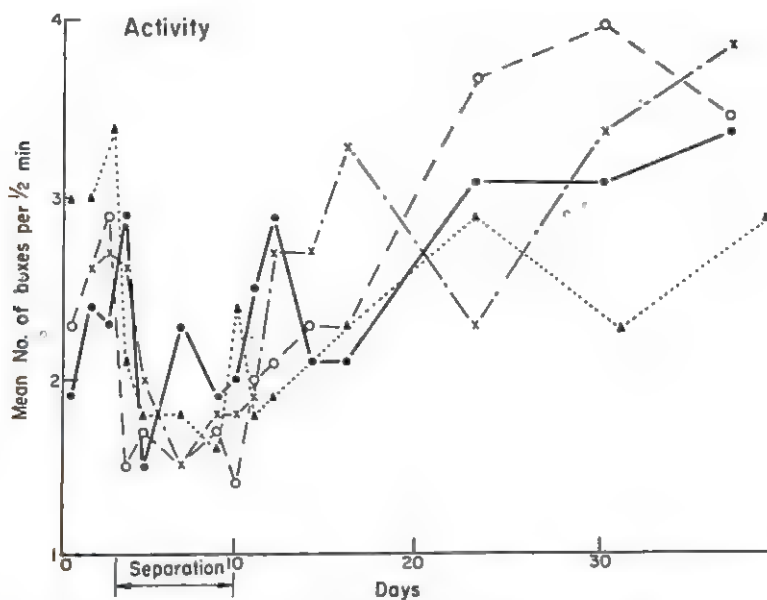


FIG. 5. The mean no. of boxes entered per $\frac{1}{2}$ min during the experimental period.

Linda x— · — · — · — · — x

Hilary o— — — — — o

Doris ● — — — — — ●

Tim ▲ — · — · — · — · — ▲

(iv) *Time spent eating* (Table 2 (d)). During separation the infants were of course deprived of maternal milk, and presumably for this reason were recorded eating in a higher proportion of half-minute periods than the pre-separation means. During the watches on the first day of separation, however, one infant (Hilary) hardly ate at all (8 per cent). For all but Doris the separation mean was greater than that on Day 4.

During the post-separation period the infants were recorded eating solid food less than when the mother was away, but there were no consistent trends within this period.

(v) *Manipulative play* (Table 2 (e)). The percentage of half-min in which the infants were recorded manipulating inanimate objects decreased dramatically on the day the mother was removed (4, 2, 3, 5 per cent) from the pre-separation mean. Although there was some recovery during separation in all infants except Tim, the percentages on the first day of the mother's return were lower than both pre-separation and separation means in all four animals. In three of the animals the figure returned to fluctuate around the pre-separation mean within four days of the mother's return, but Tim showed less manipulative play than before separation up to at least a month after the mother was returned.

(vi) *Social play* (Table 2 (f)). Play with other infants or adults in the group was scored as approach/withdrawal (no physical contact) and rough-and-tumble play (see Harlow 1962). There was a marked decrease in the amount of play on the day the mother was removed, and the mean for the separation period was lower than the

pre-separation mean in all animals. In fact the effect seems to have been progressive, for on the last day of separation the amount was lower than the separation mean in three animals, and only just greater in the fourth. After the mother returned, the amount of play increased. Doris started to play as often as before separation on the first day, Hilary on the fifth day, Linda after a week, but Tim was consistently below the pre-separation mean up to Day 37. Not only the amount of play but also the extent to which it was initiated by the experimental animals was affected by the mothers' removal, and this effect also continued for some time after the mothers' return.

(vii) *Activity—summary.* In summary, over the separation period as a whole there was less locomotor activity, manipulation and social play than during the pre-separation watches, but more eating. Within the separation period the infants became inactive less often, and tended to eat more and show more manipulative play. However, this does not necessarily indicate a recovery from the depression, for as the separation period progressed they tended to be less mobile when they were active, and to show less social play. These changes in locomotor activity and play disappeared within 1–7 days after the mothers' return in three of the infants, but persisted for at least a month in Tim.

(E) *Interactions between infant and mother after separation period*

(i) *Behaviour on mother's return.* In three cases (Doris, Hilary, Tim) the infant went to its mother immediately she entered the cage. Doris and Hilary were accepted immediately: Doris left for the first time after 18 min but Hilary remained on her mother until rejected after 5/6 min. Tim's mother rejected him several times before settling down to nurse him for over 2 hr. Linda's mother was mounted by the male when she entered the cage, but even after that Linda approached her only slowly. She came off again after 11 min and went away and embraced another infant for a few minutes until her mother retrieved her.

By most criteria all infants stayed on their mothers more, or went less far from her if they came off, during the first half-hour after the mother's return than later. During the first few hours after their mothers' return Linda and Doris came off their mothers and sat eating near them in an apparently relaxed fashion. They did not show any marked tantrums when rejected by their mothers. Both Hilary and Tim, however, called almost continuously when off their mothers, and showed violent tantrums with frequent whoos and geckers when their mothers started to reject them.

(ii) *Qualitative observations over post-separation period.* After the mother's return all infants were more clinging than they had been before separation. They showed exceptionally intense tantrums when rejected by their mothers, and often flung themselves violently on to their mothers, or sometimes, when the mother had rejected them, on to aunts. A further interesting feature was the way in which the infants could change from being relaxed to being very upset and clinging without apparent cause. Thus Tim on Days 11 and 12 was recorded as coming off his mother in an apparently calm fashion, then suddenly panicking and going on her geckering. The most dramatic example was that of Linda, who on Day 16 was playing in a very relaxed fashion for about the first 35 min of the watch, then went on the mother and slept. When she awoke she seemed very upset and, terrified, cringed and would

hardly leave her mother. Towards the end of the watch she again seemed perfectly relaxed and was playing hard.

(iii) *Eyes closed.* The proportion of half-minutes in which the infants were recorded with their eyes shut was greater on the day the mother was returned than the pre-separation mean. For three of them (not Doris) the mean for days 11–16 was also greater than the pre-separation mean: after this there was no consistent trend (Table 1 (b)).

(iv) *Awake on nipple.* For all except Linda, the percentage of time spent on the nipple on the day of the mother's return, and the percentage for the first week afterwards, was higher than the pre-separation mean. During Days 23–37 Linda and Doris spent on average slightly less time on the nipple than before separation, but Hilary and Tim spent more.

(v) *On mother, off nipple.* On the first day of the mother's return the percentage of half-minute periods spent on the mother but off the nipple was higher than the pre-separation mean in 3 infants (not Doris). The mean for Days 11–16 was higher than the pre-separation mean for Tim and Hilary and for Days 23–37 was higher for all except Doris.

(vi) *Time off mother.* All infants spent much less time off their mothers during the first few days after their return (Fig. 6). With Tim and Hilary the effect was dramatic and long-lasting. They hardly came off their mothers at all during the first post-separation day (Day 10), and the mean percentage of half-minutes during which they were recorded off their mothers for Days 11–16 and 23–37 was below the pre-separation mean. Linda and Doris were less severely affected: while the mean for the

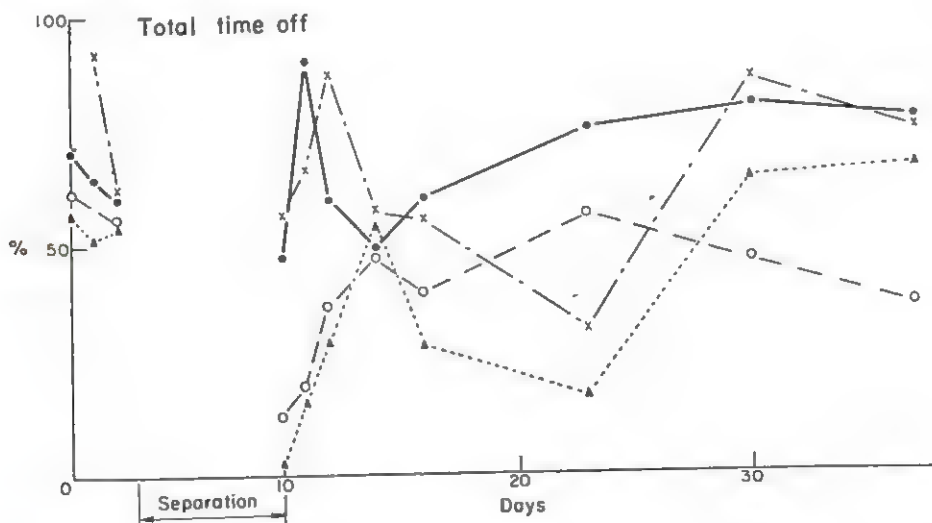


FIG. 6. The percentage of $\frac{1}{2}$ min in which the infants were recorded off their mothers during the experimental period. The data for the whole watch were used.

Linda x — · — · — · — x
Hilary o — — — — — o
Doris ● — — — — — ●
Tim ▲ — · — · — · — ▲

first post-separation week was still below the pre-separation mean, the scores were subsequently similar.

However, mean percentages over a period are misleading here. After the initial depression of this measure, each infant showed a temporary recovery during the first post-separation week. This was followed by a decline and then a more permanent recovery. This is discussed further in a later section.

(vii) *>2 ft as a percentage total time off.* Not only did the infants leave their mothers less during the post-separation period, but they went less far from them. For all four infants the percentage of half minutes in which they were off their mother at all, in which they went more than 2 ft from her, was lower on the first day of the mothers' return than before separation (Fig. 7). The mean for Days 11–16 was also below the pre-separation mean. On Days 23–37 the scores for all animals fluctuated around the pre-separation mean, and no consistent trends were discernible.

(viii) *No. of half minute periods spent wholly more than 2 ft from the mother as a percentage of number in which off her at all.* After separation the infants not only went to a distance from their mothers less often, but also spent fewer periods of $\frac{1}{2}$ min or longer away from her. For all infants this measure was smaller on Day 10 than the pre-separation mean (in Tim it was zero), and for all except Linda this was true also for Days 11–16 and 23–37.

(ix) *Approaches and leavings.* The difference between the percentage of approaches and the percentage of leavings which were due to the infant gives a measure of the extent to which changes in proximity between mother and baby were due to changes in the behaviour of the one or the other (see above). In all four infants $\%A - \%L$ on the

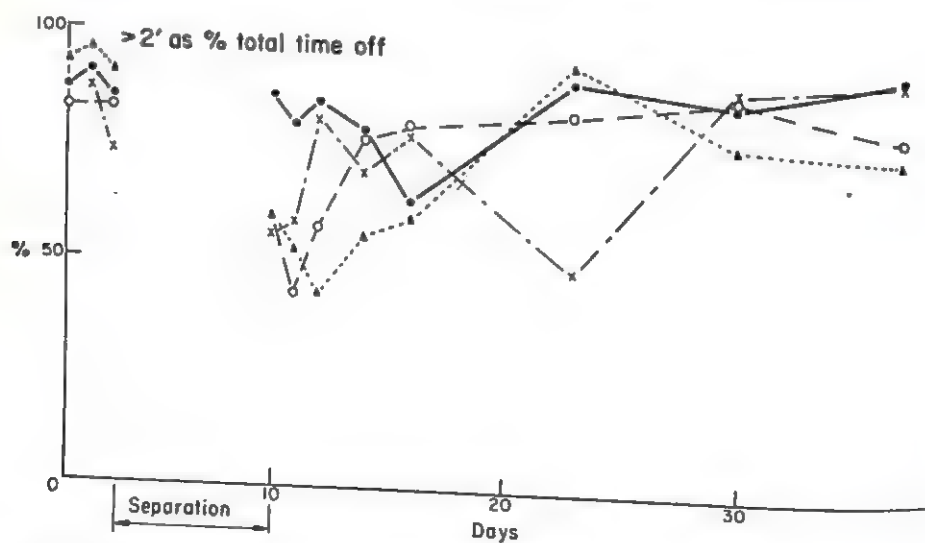


FIG. 7. The no. of $\frac{1}{2}$ min in which the infants were recorded more than 2 ft from their mother as a percentage of the total time they were off her during the experimental period.

Linda x — — — — — x
 Hilary o — — — — — o
 Doris ● — — — — — ●
 Tim ▲ — — — — — ▲

first day of the mothers' return was above the pre-separation mean (Table 1 (e)). No generalizations about subsequent changes in this measure can easily be made, but a comparison between its day-to-day changes and the proportion of half-minute periods in which the baby was off the mother is revealing. As noted above, the time spent off the mother recovered during the first few days after the mothers' return, then regressed to a trough, and then showed a more permanent recovery—though the time course of this varied between individuals. During the pre-separation watches, and again after the trough, the day-to-day changes in $\%A-\%L$ and in the total time off were almost invariably in the same direction (Table 3). This indicates that the changes in the total time off the mother were governed largely by changes in the mother's behaviour. But in the period after the mother's return and before the trough, this was not the case. This suggests the occurrence during this period of complex interactions between the demands of the recently deprived infant and the degree of tolerance of the mother.

TABLE 3. RELATIONS (i) BETWEEN CHANGES IN THE DIFFERENCE BETWEEN THE PERCENTAGES OF APPROACHES AND LEAVINGS DUE TO THE INFANT, AND THE TOTAL TIME OFF, AND (ii) BETWEEN CHANGES IN THE PROPORTION OF OCCASIONS IN WHICH THE INFANT'S ATTEMPTS TO GAIN THE NIPPLE WERE REJECTED AND THE TOTAL TIME OFF. (THE DATA ARE SPLIT AROUND THE POST-SEPARATION TROUGH IN T.T. OFF SHOWN IN FIG. 6.)

		Pre-separation	Post-separation to trough in T.T. off	Post-separation after trough
(i)	$\%A-\%L$ and T.T. off			
	Move in same direction	6	8	9
	Move in different directions	0	9	2
(ii)	$\frac{R}{A+M+R}\%$ and $\% \text{ T.T. off}$			
	Move in same direction	5	8	8
	Move in different directions	1	9	3

(x) *Rejections and acceptances.* As is shown in Table 3 the relation between time off and the percentage of rejections is similar to that for total time off and $\%A-\%L$, and thus supports the conclusions discussed above.

It could be that during this immediate post-separation period the behaviour of one of the animals is changing very rapidly and there is a time lag before the consequent change in the other animal. This might account for the apparent lack of correlation between total time off and $\%A-\%L$ or $R/(A+M+R)\%$ in this period.

(xi) *Grooming by mother.* The percentage of half-minute periods in which the

mother was recorded as grooming her infant fell below the pre-separation level on Day 10 for two infants (Tim and Hilary), and rose for Doris and Linda. Thereafter this measure was at about the pre-separation level except for Linda in which it remained high for several weeks.

Post-experimental period

After the experimental period the routine watches were continued, the animals being observed for 6 hr once every 4 weeks until they were a year old. As shown in Fig. 1, data on the time spent off the mother indicate that the effects of deprivation lasted for at least several months in Hilary and for the rest of the first year in Tim. All four animals were affected when the rest of the first year is considered as a whole. Thus comparing the total time off until they were a year old for all watches after the mother was returned with the medians for the control animals, Linda was below the median twice and above it 4 times (Fig. 1). The corresponding figures for Doris, Hilary and Tim were 3 and 3, 5 and 2, and 7 and 0 respectively. Thus all four animals tended to be lower with respect to the median of the controls over this period than before separation (see Fig. 1).

As discussed on p. 181, the measure $\%A-\%L$ gives an indication of the extent to which the infant tended to seek proximity to the mother. When the separated babies are compared with the median for the controls up to one year (Table 4) all four infants were above the median on a higher proportion of occasions after separation than before. They were thus all taking the initiative in being close to their mothers more, relative to the controls, than before separation.

The effect of the presence of the mother on the reaction to external stimuli

(i) *Strange objects*

For a week before the experiment began the infants had access to a "filter" cage

TABLE 4. THE RELATION BETWEEN $\%A-\%L$ FOR THE SEPARATED INFANTS AND THE MEDIAN FOR THE CONTROLS UP TO 1-YEAR-OLD

		No. of records which were:		
		Above control median	Equal to control median	Below control median
Linda	Before separation	7	0	5
	After separation	3	1	2
Doris	Before separation	2	2	8
	After separation	4	1	2
Hilary	Before separation	3	0	7
	After separation	3	0	1
Tim	Before separation	7	1	3
	After separation	7	0	0

(8 ft \times 4 ft \times 4 ft) which was attached to the side of their home run. Access was through an entrance small enough to exclude adults, but large enough to allow easy passage to the infants. On Days 2, 5 and 37 of the experiment the animals were tested by clipping a small plastic model animal to the floor of this cage at the end furthest from the home run, a different model being used for each test on each animal. The monkeys were then observed for 30 min and records made of entry into this filter cage.

Tim looked into the filter cage once in every test. None of the three other animals entered the cage in the test done on Day 5, when the mother was absent, though Doris and Hilary did so 7 and 10 times respectively before separation. All three entered the cage in the post-separation tests (Linda 6 times, Doris 7 and Hilary 10).

Thus the presence or absence of the mother affected the willingness of the infants to approach a strange object. This confirms Harlow's data on infants brought up in more restricted conditions with surrogate mothers (Harlow and Zimmermann, 1959).

(ii) *Frightening situations*

Immediately after each of the above strange object tests a mildly frightening situation was produced by one of the experimenters either pulling the door to the inside pen to and fro, jumping up and down and clapping, or dropping a dustbin lid on the concrete by the cage. Records were then made for 30 min of the activity of the infant, and also (on Days 2 and 37) of whether it was on the mother or not.

Comparing the activity data from the test with that from the watch on the same day, the percentage of half-min spent sitting was greater and the percentage spent eating less. When the difference between the routine and test data before and after separation is compared with the difference between them during separation, this second difference is found to be significantly greater than the first (t test: $P < 0.01$ for sitting and $P < 0.02$ for eating).

DISCUSSION

It is clear from these results that all four infants were disturbed by separation from their mothers. Not only was their behaviour changed while the mother was absent, but also at least temporarily when she was returned: in two infants the disturbance lasted at least some months. Furthermore the extent of the disturbance varied with the kind of relationship between mother and infant beforehand.

Although these monkeys did not show the 'phase of detachment' which Bowlby (1961) has described in human children when their mothers have returned after a period of separation, in other ways the effects were similar. Thus the use of infra-human primates in attempting to elucidate problems concerning the separation of mothers and infants seems likely to be profitable. Furthermore, in view of the presumably smaller abilities for conceptual and abstract thought present in the lower species, the similarities suggest that rather more parsimonious explanations of the symptoms than those sometimes used in the human case may be acceptable.

SUMMARY

- (1) The mothers of four rhesus monkey infants, living in small social groups, were removed for 6-days when the infants were 30-32-weeks-old. Records were made of

- various aspects of mother-infant interaction and infant behaviour before, during and after the separation period.
- (2) During separation the animals' behaviour changed considerably, and could be described as "depressed". They gave a higher number of whoo calls than before separation, and showed less locomotor and play activity. Over the course of the separation period they became active for more of the time, but they showed less intense activity during those periods in which they were active at all.
 - (3) When the mother was returned all four infants spent more time on their mothers than before separation. The effect was more marked, the more time the infant had spent on its mother before the experiment. The relations between the various response measures suggested complex interactions between the demands of the infant and the tolerance of the mother during the period after her return.
 - (4) The more severe effects of the deprivation experience disappeared in a few days after the mothers' return in two of the infants, but were present for at least some months in the others. All four infants showed some effects during the rest of the first year of life.
 - (5) During separation the infants investigated strange objects less, and responded more strongly to frightening stimuli, than when the mother was present.
 - (6) The effects of separation shown by these infants were somewhat similar to those seen in human children who have had the same sort of experience.

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GENETIC VARIANCE IN ADAPTIVE PERSONALITY TRAITS*

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INTRODUCTION

A RENEWED interest in the twin method in developmental psychology is a healthy sign that we are confronting our ignorance about the sources of variation in cognitive ability and personality traits. Despite a sometimes well-founded pessimism about the effectiveness of earlier efforts to contribute to an understanding of the roles of heredity and environment in human behaviour generally, greater sophistication about the complexities of genetics and personality measurement has resulted in significant advances in *human behaviour genetics* which are not generally appreciated (Vandenberg, 1965). Recent overviews of interest to developmental psychologists may be found in Gottesman (1963b), McClearn (1964), and Vandenberg (1966). The present paper is a preliminary report in a broader research programme into the origins of individual differences in both normal and abnormal personality characteristics (Gottesman, 1963a, 1965; Gottesman and Shields, 1966a, b).

One of the concerns of behaviour geneticists is the possible evolutionary significance of a trait. Simpson (1958) has helped foster this concern by noting that the modern theory of evolution reinstated behaviour as one of the essential determinants of evolution. Mayr (1963) succinctly summed up the role of behaviour in evolution: "The point that is important for us is that new habits and behaviour always start in a concrete local population. If the new behaviour adds to fitness, it will be favoured by selection and so will be all genes that contribute to its efficiency" (p. 605). Fitness may be simply defined, for our purposes, as number of offspring surviving to an age when they might reproduce. Needless to say, the gene to behaviour pathway involves a very complex chain of events (cf. Fuller and Thompson, 1960; Meissner, 1965).

There are no genes for *behaviour*. The genes exert their influence on behaviour through their effects at a more molecular level of organization. Enzymes, hormones, and neurons mediate the path between the genes and those psycho-social aspects of behaviour termed personality. Even the latter complications have been compounded by discoveries in molecular genetics involving the concepts of *regulator* and *operator genes* (e.g. the work of Jacob and Monod (1961)) that influence the sequential activation of well-established *structural gene* potential throughout the life of an organism.

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Henceforth, formulations in behavioural genetics will have to reckon with the fact that genetic variation in individual differences may arise from alterations in structural genes, either qualitative or quantitative, or by activation or inhibition of regulator genes, also qualitative or quantitative.

For our present purposes, it will be sufficient to conceptualize the contribution of heredity to personality trait variation in terms of heredity's determining a reaction range (Gottesman, 1963b). Within this framework a genotype determines an indefinite but circumscribed assortment of phenotypes, each of which corresponds to one of the possible environments to which the genotype may be exposed. The theory of natural selection would lead us to expect that traits with adaptive significance evolved and endured because of such adaptive value. The processes underlying organic evolution should lead to appreciable genetic variation in those personality traits with patent adaptive value. However, a number of genetically conditioned traits may be anticipated whose adaptive value is no longer apparent in current environments; a case in point is the presence in Negro Americans of a type of hemoglobin with adaptive value in the malaria-infested regions of their African forebears (Dobzhansky, 1962).

METHODS

Of the few available methods for investigating the genetic aspects of human behaviour, the twin method is the most fruitful and economic. The underlying principle of the twin method is simple and sound: since identical (MZ) twins have identical genotypes, any observed dissimilarity within pairs must be due to environmental factors. The latter may be intrauterine, perinatal or postnatal. Fraternal (DZ) same-sex twins, while *on the average* differing in 50 per cent of their genes, provide a measure of environmental control not otherwise possible by virtue of sharing such factors as birth rank, mother's age and experience, schooling and population. When both kinds of twins are studied simultaneously from the same variance of a trait in that population may be obtained. The principle may be schematically illustrated with the following equations, once the within pairs variances (V_{MZ} and V_{DZ}) have been calculated:

$$V_{DZ} = V_{\text{Environmental}} + V_{\text{Hereditary}} \quad (1)$$

$$V_{MZ} = V_{\text{Environmental}} \quad (2)$$

$$V_{DZ} - V_{MZ} = V_{\text{Hereditary}} \quad (3)$$

The assumptions necessary for the complete validity of the method are that the average intrapair differences in *trait-relevant* environmental factors are substantially the same for both MZ and DZ twins, and, that variance associated with the interaction of hereditary and environmental factors is small or equivalent in both equations (1) and (2). Criticisms of the method may be found in the references already cited.

Twin study statistics. Twin investigators in the behavioural sciences have elected different ways of expressing their findings. Allen (1965) has found fault with any single way of statistically summarizing the data. When a trait is qualitative or can be

arbitrarily but usefully dichotomized, the simplest way of expressing results is in terms of the percentage of MZ and then DZ pairs that are concordant for the presence of the trait. Most responses in the purview of personality research do not lend themselves to a qualitative analysis. Since the inference that a trait has an appreciable component of its variance associated with genetic factors depends on the demonstration of greater similarity within MZ pairs than DZ pairs, other approaches are required for handling continuously distributed traits. One approach is to show that the (intra-class) correlation coefficient for MZ pairs is significantly higher than that for the DZ pairs. This method is straightforward and tells *whether* genetic factors are even worth entertaining; it fails to tell us the strength of the genetic factors, however. The latter is sometimes hazardously inferred from a statistic known as *heritability*, H . The heritability of a trait in the twin method is defined as the proportion of within family trait variance associated with genetic factors. The values thus obtained are sample-specific until proved otherwise, and also suffer from not taking into account between family genotypic variance. Twin method H values underestimate the role of genetic factors in the total population (Falconer, 1960). H is easily calculated from the within pair variances:

$$H = \frac{V_{DZ} - V_{MZ}}{V_{DZ}} \quad (4)$$

The last statistic to be mentioned is the F or variance ratio formed by V_{DZ}/V_{MZ} . The statistical significance is easily found from tables and by itself permits us to infer the strength of genetic factors in eliminating within MZ pair variation. The same F ratio is used to test the significance of H so that both F and H may be conveniently presented together. The degrees of freedom involved for F are equal to the number of DZ and MZ pairs respectively.

Subjects. The sample will be referred to as the Harvard Twins to distinguish it from a Minnesota twin sample of the same age which was given some of the same tests (Gottesman, 1963a). Ss were same-sex, complete pairs of twins in grades 9–12, volunteering from some 20 co-operating school systems in the Greater Boston area, other than Boston itself, with an enrolment of 33,617 and from some fifteen other school systems in the same area that refused official co-operation, with an enrolment of 34,154. Co-operating schools provided a complete list of all twin pairs, numbering 180 pairs of same-sex twins. The latter number was almost exactly the number expected, based on a figure of 0.55 per cent of the 15-year-old population being intact pairs of same-sex twins (Allen, 1955). Twins in the non-cooperating systems were contacted by advertisements in neighbourhood newspapers and through Mothers of Twins Clubs. The names of fifty-nine additional pairs came from the latter sources, only 31 per cent of the potential number of pairs in that population. Only 11 pairs in the total list of 239 pairs came from the huge Catholic parochial school system (33,489 in the age range sampled).

Of the 180 pairs from the co-operating systems, 132 (73 per cent) actually volunteered and completed the personality tests and procedures to be described. Of the fifty-nine additional pairs, forty-six (78 per cent) completed the requirements. Of the total of 178 pairs of tested volunteers, ninety-four were female and eighty-four

male. In terms of social class as inferred from fathers' occupation (Minnesota Scale for Paternal Occupations), 22 per cent were professional (Class I), 25 per cent semi-professional and managerial (II), 38 per cent skilled trades and clerical (III) and 15 per cent semi-skilled or engaged in occupations requiring little training (V-VII). In terms of religion, 48 per cent were Catholic, 19 per cent Jewish, 15 per cent Conservative Protestants and 18 per cent Liberal Protestants or non-denominational. It would appear that Catholics were well represented, despite the non-co-operating parochial system, because suburban Catholics sent their children to public schools.

Thirty-one pairs of twins were dropped from the sample of 178, leaving a final sample of 147 pairs of same-sex twins. The thirty-one pairs were eliminated because one or both members had invalidated their personality tests, either intentionally or through poor reading comprehension. Invalidity was determined by a raw score of 10 or higher on the *Lie* scale of the Minnesota Multiphase Personality Inventory (MMPI) or a raw score of 22 or higher on the *F* scale of the MMPI. The final sample of 147 pairs was composed of seventy-nine pairs of MZ twins, thirty-four male and forty-five female, and sixty-eight pairs of DZ twins, thirty-two male and thirty-six female. For reasons of economy, forty of the original 178 pairs who were clearly MZ or DZ were excused from blood typing; zygosity of the remaining 138 pairs was determined by the extensive blood grouping procedure suggested by Smith and Penrose (Gottesman, 1963a).

Procedures. All twins were administered the California Psychological Inventory (CPI) (Gough, 1965), MMPI (Dahlstrom and Welsh, 1960), a brief vocabulary test of intelligence (Shipley-Hartford, cf. Sines, 1958), and a biographical data sheet. Parents were asked to volunteer and took the same tests and, in addition, filled in the Adjective Check List (Gough, 1960) for themselves and each of their two twins; 177 parents were tested. Siblings of the twins who were the same sex and between the ages of 14 and 25 were asked to participate and fifty-eight came forth. Only certain of the twins' CPI results will be discussed in this paper (cf. Gottesman, 1965).

Gough (1965) described the CPI as "a true-false objective inventory scaled for 'folk concepts', that is, variables used for the description and analysis of personality in everyday life and in social interaction. It is theorized that such folk concepts, viewed as emergents from interpersonal behaviour, have a kind of immediate meaningfulness and universal relevance which enhance their attractiveness as diagnostic concepts. Hopefully, diagnoses and forecasts of social behaviour, if mediated by such concepts, will be more accurate and dependable than forecasts arrived at by way of other formulations" (p. 205). No report has yet been made of twin similarities on the eighteen scales of the CPI, nor has anyone suggested that some of the variance on the scales may reflect genetic variability in a population.

RESULTS

The within pair of MZ and DZ variances for each of the eighteen CPI scales are given for the total group, females and males in Tables 1, 2 and 3 together with the heritability (H) of each scale and its F ratio.

For the total sample of MZ twins (Table 1) all eighteen of the CPI scale intra-class r s were significant at less than the 0.01 level. The r s ranged from 0.29 to 0.60.

TABLE 1. GENETIC COMPONENTS OF VARIANCE FOR THE CPI (TOTAL TWIN SAMPLE)

Scale	<i>V</i> of DZ <i>N</i> = 68	<i>V</i> of MZ <i>N</i> = 79	<i>H</i>	<i>F</i> ^a
Dominance	80.706	41.342	0.49	1.95†
Capacity for status	71.816	53.532	0.25	1.34
Sociability	90.838	46.082	0.49	1.97†
Social presence	79.603	51.405	0.35	1.55*
Self-acceptance	99.787	53.848	0.46	1.85†
Sense of well-being	101.80	91.437	0.13	1.11
Responsibility	67.206	49.690	0.26	1.35
Socialization	88.904	60.184	0.32	1.48*
Self-control	71.559	51.994	0.27	1.38
Tolerance	86.456	62.924	0.27	1.37
Good impression	70.824	44.158	0.38	1.60*
Communality	79.772	64.677	0.19	1.23
Achievement via conformance	66.625	76.297	0.00	0.87
Achievement via independence	83.059	63.291	0.24	1.31
Intellectual efficiency	72.559	59.405	0.18	1.22
Psychological mindedness	82.912	56.639	0.32	1.46
Flexibility	70.309	60.044	0.15	1.17
Femininity	60.868	44.576	0.27	1.36

^a $F_{0.05} = 1.47$ indicated by *, $F_{0.01} = 1.72$ indicated by †.

TABLE 2. GENETIC COMPONENTS OF VARIANCE FOR THE CPI (FEMALE TWINS)

Scale	<i>V</i> of DZ <i>N</i> = 36	<i>V</i> of MZ <i>N</i> = 45	<i>H</i>	<i>F</i> ^a
Dominance	56.389	32.978	0.42	1.71*
Capacity for status	88.528	58.278	0.34	1.52
Sociability	93.917	40.844	0.56	2.30†
Social presence	65.194	48.411	0.26	1.35
Self-acceptance	81.569	47.467	0.42	1.72*
Sense of well-being	83.125	67.756	0.18	1.23
Responsibility	61.722	31.056	0.50	1.99*
Socialization	68.194	44.706	0.34	1.53
Self-control	91.514	43.333	0.47	1.89*
Tolerance	93.194	63.622	0.32	1.46
Good impression	74.736	44.678	0.40	1.67
Communality	65.319	57.567	0.12	1.13
Achievement via conformance	79.458	61.789	0.22	1.29
Achievement via independence	101.15	54.344	0.46	1.86*
Intellectual efficiency	77.264	42.067	0.46	1.84*
Psychological mindedness	80.625	61.756	0.23	1.31
Flexibility	77.625	56.011	0.23	1.39
Femininity	57.694	49.200	0.15	1.17

^a $F_{0.05} = 1.68$ indicated by *, $F_{0.01} = 2.09$ indicated by †.

TABLE 3. GENETIC COMPONENTS OF VARIANCE FOR THE CPI (MALE TWINS)

Scale	<i>V</i> of DZ <i>N</i> = 32	<i>V</i> of MZ <i>N</i> = 34	<i>H</i>	<i>F</i> ₀
Dominance	108.06	52.412	0.51	2.06*
Capacity for status	53.016	47.250	0.11	1.22
Sociability	87.375	53.015	0.39	1.65
Social presence	95.812	55.368	0.42	1.73
Self-acceptance	120.28	62.294	0.48	1.93*
Sense of well-being	122.81	122.78	0.00	1.00
Responsibility	73.375	74.353	0.00	0.99
Socialization	112.20	80.676	0.28	1.39
Self-control	49.109	56.838	0.00	0.86
Tolerance	78.875	62.000	0.21	1.27
Good impression	66.422	43.471	0.35	1.53
Communality	96.031	74.088	0.23	1.30
Achievement via conformance	52.187	95.500	0.00	0.55
Achievement via independence	62.703	75.132	0.00	0.83
Intellectual efficiency	67.266	82.353	0.00	0.82
Psychological mindedness	85.484	49.868	0.42	1.71
Flexibility	62.078	65.382	0.00	0.95
Femininity	64.437	38.456	0.40	1.68

* $F_{0.05} = 1.79$ indicated by *, $F_{0.01} = 2.28$ indicated by †.

Only half the DZ *r*s were significant at the 0.01 level with five more at the 0.05 level. The calculations of *H* values for the total sample of twins showed that seven traits had approximately one-third or more of the within-family variance significantly associated with genetic factors: Sociability, Dominance, Self-acceptance, Social presence, Socialization, Good impression and Psychological mindedness. A further five traits had *H* values greater than 25 per cent. Interpretation of the results is facilitated by looking at the meaningful clusters or factors in the CPI. Table 4 presents the major results of the analysis from a behavioural genetics viewpoint.

TABLE 4. HERITABILITY OF CPI EXTRAVERSION-INTROVERSION SCALES

Factor	CPI scale	<i>H</i>	<i>F</i>
Person	Sociability	0.49	1.97†
Orientation	Self-acceptance	0.46	1.85†
or	Social presence	0.35	1.55*
Extraversion- introversion	Dominance	0.49	1.95†

The first 4 of the 7 traits named above completely define 1 of the 2 factors derived from the CPI by Nichols and Schnell (1963) which they named Person Orientation. The factor scale correlated -0.66 with the Social-introversion scale of the MMPI.

Thus the factor can also be conceptualized as a dimension of extraversion-introversion with variation equally determined by genetic and non-genetic substrates.

Table 5 gives H results for the scales in the other major factor of the CPI. Gough (1965) considered it to be a dimension of Dependability-undependability and Nichols and Schnell (1963) have termed the factor Value Orientation. It is difficult to relate the latter concept to ideas of adaptation and evolution but not the former. The dimension has a low but appreciable genetic component.

TABLE 5. HERITABILITY OF CPI DEPENDABILITY-UNDEPENDABILITY SCALES

Cluster	CPI scale	H	F
Value orientation or dependability-undependability	Responsibility	0.26	1.35
	Socialization	0.32	1.48*
	Self-control	0.27	1.38
	Tolerance	0.27	1.37
	Good impression	0.38	1.60*
	Communality	0.19	1.23

Sex differences in heritability of personality traits have been broached in an earlier paper (Gottesman, 1963a). Both sex role typing and sexual selection in the Darwinian sense were suggested as relevant to an evaluation of such differences. The area is a fascinating one in need of a great deal of thought. Table 6 shows the largest differences found with the CPI for the present sample.

TABLE 6. SEX DIFFERENCES IN CPI SCALE HERITABILITIES

Scale	H Female ($N = 81$ prs.)	H Male ($N = 66$ prs.)
Responsibility	0.50	0.00
Self-control	0.47	0.00
Achievement via independence	0.46	0.00
Intellectual efficiency	0.46	0.00
Sociability	0.56	0.39
Dominance	0.42	0.51

DISCUSSION

Scarr (1965) has made the point that both longitudinal studies in child development (e.g. Honzik, 1964) and twin studies find a consistent, perhaps constitutional component in a dimension of personality like extraversion-introversion that emerges despite differences in age, sex, social class, and, within limits, culture. She reported an H value of 0.83 for the Fels Child Behaviour Scale of Social Apprehension in a large sample of 52 pairs of primary school girl twins. The author earlier reported (Gottesman, 1963a) an H of 0.71 for the Social-introversion scale of the MMPI in a sample of 68 pairs of adolescent twins, 0.60 in females and 0.84 in males. Cor-

responding values for the Harvard sample (Gottesman, 1965) were 0.33, 0.35 and 0.29. The combined probability for the two studies using the MMPI makes the genetic component of variance in the Social-introversion dimension highly significant, $P < 0.005$. The high heritability found for the Person Orientation or Extraversion-introversion factor of the CPI for the present study adds to evidence for the latter statement.

An interpretation of the above findings that appeals to the author involves a linkage with the idea that individual differences in the strength of social attachments in infancy observed by Schaffer and Emerson (1964a, b) have a large genetic component and that such a trait has obvious evolutionary significance and adaptive value. These authors defined social attachment as "the tendency of the young to seek the proximity of certain other members of the species" (1964a, p. 6). Based on the close behavioural observation of 37 infants during the first 18 months of life, Schaffer and Emerson classified 19 as "pure" Cuddlers and 9 as "pure" Non-Cuddlers, the remainder being intermediate. Cuddling behaviour was not a function of the mothers' customary mode of handling the infants. Furthermore, attention should be called to the fact that all ($N = 5$) of the Non-Cuddlers' siblings were likewise Non-Cuddlers and that 14/18 of the Cuddlers' siblings were likewise Cuddlers. Schaffer and Emerson went on to say,

"Thus the avoidance of close physical contact may be interpreted as stemming from a pervasive innate response tendency which will affect the initial development of social behaviour and which may, in some cases, even be responsible for imposing a considerable strain on the mother-child relationship. From a clinical point of view, however, it seems unlikely that the non-cuddling pattern is *per se* a bad sign prognostically. In only those instances where a mother is too rigid to use alternate ways of relating, or where she interprets the infant's behaviour as 'rejection', may one be confronted with the first step in the development of a pathological relationship" (1964b, p. 13).

The infant-mother affectional system has also been singled out for importance in non-human primates. Harlow, Harlow, and Hansen (1963), from their observations of Rhesus monkeys, posited the infant-mother (different from mother-infant) system as one of five affectional systems. It is interesting to conjecture that the child and adolescent derivatives of social attachment observed in infants are what we term sociability or are reflected in the dimension of Extraversion-introversion. Might the adult derivatives of social attachment be related to the mother-infant and father-infant affectional systems? Meehl (1962) suggested that *interpersonal aversiveness* characterized the schizophrenic and the schizotype. Schizophrenics were observed to be less fit than normals, i.e. to have fewer children, males more so than females (Goldfarb and Erlenmeyer-Kimling, 1962). The framework provided by evolutionary biology may be a useful one for synthesizing the observations listed above.

Any speculation about the mode of transmission for the genetic substrate of personality variation must limit itself to a polygenic theory as opposed to classical Mendelian models. As such, the relative absence of some of the genes in the polygenic system that may underlie the dimension of Extraversion-introversion could lead to pathological degrees of non-attachment. Perhaps some infants characterized as autistic, and some children and adults labeled as schizophrenic, have an inherited

defect in the strength of their "attachment systems" as a necessary but not usually sufficient condition for their abnormal behaviour.

CONCLUSIONS

The scientific era of human behavioural genetics is relatively young. The attempts to study the evolution of behaviour and to elucidate possible selective forces that made some behaviours more adaptive than others are fraught with disconcerting vagueness but compensatory satisfactions. With few exceptions most comprehensive efforts in human behavioural genetics have focussed on mental illness and mental deficiency. Such efforts should continue. The present paper attempted to provide some data and speculations that might be useful in bringing adaptive or non-pathological personality traits into the light cast by the modern theory of evolution.

SUMMARY

Personality test data from the California Psychological Inventory on a sample of 147 pairs of normal adolescent twins, seventy-nine identical and sixty-eight fraternal same-sex pairs, were evaluated within the framework of evolutionary biology. All eighteen of the trait intraclass correlation coefficients for the identical twins were significant at less than the 0.01 level compared to nine for the fraternal. When heritability of the traits was estimated from the intrapair variances, seven had one-third or more of the within-family variance significantly associated with genetic factors. A factor termed Person Orientation or Extraversion-introversion had the greatest genetic variation. Introversion was entertained as a derivative of the social attachment observed in infants by Schaffer and Emerson and considered by them to be a pervasive innate response tendency.

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DISTURBED CHILDREN'S ATTITUDES TOWARD PARENTS AND PEERS AS REVEALED BY SENTENCE COMPLETIONS

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INTRODUCTION

THE PRESENT study was undertaken in order to compare the sex differences and developmental trends characterizing a sample of emotionally disturbed children with those found in the normal school children studied by Harris and Tseng (1957).

Harris and Tseng included a ten-item sentence completion test as part of a battery of psychological tests administered to nearly 3,000 children in grades 3-12 in a small rural town. Attitudes towards parents and peers were elicited by the stems: "My mother——," "My father——," "Most boys are——," and "Most girls are——." The manifest content of the completions was scored as revealing either positive, negative, or neutral affect toward the subject of the sentence stem. Harris and Tseng found that in general both boys and girls expressed predominantly favourable attitudes toward parents and peers. However, in certain age and sex subgroups neutral or negative attitudes predominated in regard to a particular figure. For example, adolescent boys were predominantly neutral rather than positive in attitude toward the father. Pre-adolescent girls were mainly negative in their attitudes toward boys.

In previous studies, Cass (1952) and Jackson (1950) found that neurotic and delinquent children revealed more negative attitudes toward parents and peers than normal controls. It was anticipated that the present developmentally-oriented study could indicate whether the attitudes of disturbed children were simply uniformly more negative at all ages toward both parents and peers or whether there might not be an interaction between age, sex, psychopathological factors, and specific stimulus figure. For example, the strong cultural sanctions against expressing hostility toward parents, particularly the mother, might be expected to combine with psychodynamic factors of dependence and guilt in such a way that the cultural stereotype of the "good mother" would be defensively portrayed in the sentence completions of disturbed children. The production of such defensive responses would be all the more expected in view of the evidence that Meltzoff (1951) and Hanfmann and Getzels (1953) offer indicating that sentence completion tests tap mainly the conscious level of personality.

While the focus of the present study was primarily a comparison between normal and abnormal groups of children, a secondary purpose was the evaluation of the influence of two reality factors upon disturbed children's attitudes toward their

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parents: (1) parental (paternal) presence versus absence by reason of death or dissolution of the parental marriage, and (2) parental attitude of acceptance or rejection of the child. (The factor of "parental presence" was limited to "paternal presence" because it had been previously determined that there were almost no instances of maternal absence in the subject population available for study.)

Previous papers by Bach (1946), Sears, Pintler and Sears (1946) and Neubauer (1960) described one general effect of paternal absence: the lack of daily father-child interaction, with its mingling of gratification and frustration, makes possible a fantasy image of the father that is either highly idealized or exaggeratedly negative.

Studies of the effects of parental attitudes upon the child's attitude toward the parent indicate that the relationship is a complex one. In a study of institutionalized, pre-adolescent delinquents, Koppitz (1957) found a significant relationship between maternal rejection as evaluated from case history data and the son's expression of low affection for the mother in his projective test responses. On the other hand, deprived children studied by Newell (1934) and Riese (1962) could not let themselves see the mother as rejecting.

The foregoing considerations led to the formulation of the following hypotheses for the present study (1) grade (i.e. developmental) and sex trends in regard to attitudes toward parents and peers will differ in the school and clinic samples; (2) the clinic children will usually express a higher percentage of negative interpersonal responses; (3) the clinic children will deviate least from the school sample in regard to expressed attitudes toward the mother. Three additional hypotheses were proposed in regard to the clinic sample alone: (4) absent fathers will elicit different attitudes than fathers present in the home; (5) live absent fathers will be viewed more negatively than dead, possibly idealized, fathers; and, (6) hostile-rejecting parents will elicit a higher percentage of negative responses than accepting parents. Specific predictions were not made for hypotheses 1 and 4. In the latter case, previous doll-play studies (e.g. Bach, 1946) suggest that father-separated children would produce more positive and more neutral responses at the expense of negative ones, while the psychoanalytic studies (Neubauer, 1960) would predict an exaggeration of negative as well as positive attitudes.

METHOD

Sample

The subject population for this study consisted of children examined diagnostically after being referred to the Institute for Juvenile Research for child guidance services during the years 1951-1965. Whereas Harris and Tseng tested an entire school population, the present retrospective study was limited to the approximately 10 per cent of the clinic population to whom an examiner had previously chosen to administer a sentence completion test. The results of χ^2 tests comparing cases given the SCT with all cases examined during the years 1960-1965, suggested they are representative clinic cases in regard to the variables directly relevant to this study. The presence of parents in the home, the quality of the mother-child relationship, the nature of interaction with peers, and the degree of psychiatric disturbance, all failed to distinguish cases given the SCT from the total clinic population. Examiners were significantly more likely to give an SCT to children of average or above-average intel-

ligence than to children of below-average ability. However, this tendency to test the brighter and thus younger children at each grade level was, for the purposes of this study, a useful counterbalance to the tendency of clinic children to be academically retarded, and thus slightly older than normal children at each grade level.

The actual research sample of cases consisted of all children who: (1) were in grades 2-12 or who were 7-18 years of age at the time of the psychological examination, (2) had been given the *Incomplete Sentences Blank* (Rotter, 1950) or the *Sentence Completions* (Rohde, 1946), and (3) had responded to at least one of the four stems involving parents and peers. A total of 598 cases was found to meet these criteria.

The manifest affect of the sentence completions was rated as revealing either a positive, negative, or neutral attitude toward the subject of the sentence stem. The scoring manual used by Harris and Tseng (1957) was adapted for this study by the addition of supplementary instructions and scoring samples drawn from clinic cases. The two junior authors (D. P. and M. K. P.) obtained 91 per cent agreement on the first 413 cases. The senior author (E. E. L.) and one junior author (D. P.) obtained 89 per cent agreement on 185 cases added to the sample at a later date. All inter-rater discrepancies were resolved by discussion.

Since neither the Rotter nor the Rohde SCT contained four stems identical with those used by Harris and Tseng, responses to the parent and peer stems of both tests were recorded and rated initially. Then the obtained distributions of responses made by each sex to each set of parallel stems were compared by means of χ^2 . The Rohde stem "Girls usually———" was eliminated from subsequent analyses because it yielded a significantly different distribution of responses from the Rotter stem which more closely approximated the wording used by Harris and Tseng. The Rotter stem "A mother———" was eliminated on qualitative grounds as not being equivalent to the stem "My mother———."

The 598 clinic cases yielded a final research sample of 239 scorable responses to the stem "My mother———," 568 scorable responses to the stem "My father———," 349 scorable responses to the stem "Most girls———," and 572 scorable responses to the stem "Boys———," or "Most boys———." Elimination of cases permanently out of school resulted in totals of 233, 553, 339 and 558 respectively for all comparisons involving grade level.

Background data

Background data regarding parental absence from the home and parental attitude toward the child were tabulated from the IBM summary punch cards coded for each case. The ratings of parental attitude were collapsed into a simple dichotomy: hostile, rejecting, punitive, etc. versus any and all attitudes not directly hostile. These ratings, which were made routinely by the psychiatrist or social worker assigned to the case, were used for exploratory purposes although their reliability and validity must be regarded as open to question (Lessing and Schilling, 1966).

Statistical analysis

The comparison of age and sex trends in normal and disturbed samples of children was performed by means of graphic and statistical methods. Although Harris and Tseng compared boys and girls on a grade-by-grade basis, the small size of the clinic

sample precluded the retention of this method of analysis. Therefore, the clinic cases were separated by sex and grouped into four grade categories: 2-4, 5-6, 7-8, and 9-12 with age ranges of 7-10, 10-12, 12-14, and 14-18 respectively. This method of grouping yielded 32 cells: 2 sexes, 4 grade levels, and 4 sentence stems. The cell sizes ranged from 10 to 133 cases with a mean cell size of 18 cases.

The original data of Harris and Tseng were grouped into similar categories for comparative purposes, except that the lowest grade category formed from their data contained only grades 3 and 4 instead of grades 2-4.

The data were then analysed by means of the multidimensional χ^2 technique described by Sutcliffe (1957). His model 1b for random sampling with parameters estimated from the data, was utilized in the preparation of a computer program for the IBM 1620. The effects of sex, grade level, and clinical status (clinic versus school sample), which would be main effects in an analysis of variance model, appear as two-factor interactions between response category on the dependent variable and classification on a given independent variable. For example, a "clinic sample versus school sample" difference in attitude toward a parent would emerge as an interaction between response category on the attitude variable (positive, negative, or neutral) and classification on the clinical status variable.

In order to clarify the major trends in the data, the graphic presentation was based on a single score, the net percentage or net preponderance of positive responses. When the percentage of negative responses is subtracted from the percentage of positive responses given by a particular subgroup, the resulting net positive score is the equivalent of a mean score which weights positive responses as a +1, negative responses as a -1, and neutral responses as 0.

RESULTS AND DISCUSSION

Grade and sex trends in school and clinic samples

The mean percentages of positive, negative and neutral attitudes expressed by the school and the clinic samples appear in Table 1. The results of the multivariate χ^2 analysis are presented in Table 2.

The first two lines of data in Table 2 indicate that attitudes toward all four stimulus persons vary significantly according to the sex and grade level of the child. The basic hypothesis of the study, that the clinic and school samples would differ significantly in developmental trends and sex differences, is supported by the significant "attitude by status by grade" and "attitude by status by sex" interactions. Only in regard to the mother do the sex trends fail to vary significantly in the two samples. The specific trends regarding each stimulus figure will be discussed in turn.

Meanwhile, it should be noted in passing that Table 2 reveals some differences which do not involve the dependent variable "interpersonal attitude," and are thus not germane to the purposes of this paper. For example, the significant "clinical status by sex" interactions reveal that boys predominate in the clinic sample but not in the school sample.

Attitude toward mother. As a supplement to the statistical data in Table 2, the responses recorded in Table 1 have been summarized in a graph of the net preponderance of positive responses (Fig. 1). The most important finding is that clinic status *per se* does not permit any prediction of attitude toward the mother ("attitude by

TABLE 1. PERCENTAGE OF POSITIVE, NEUTRAL, AND NEGATIVE ATTITUDES EXPRESSED TOWARD PARENTS AND PEERS BY CLINIC SAMPLE (CS) AND SCHOOL SAMPLE (SS)

Stimulus, sex and grade of respondents			Type of response in percentages							
			Positive		Negative		Neutral		Net positive	
			CS	SS	CS	SS	CS	SS	CS	SS
I. Mother										
Boys:	2-4		65.8	70.2	5.3	5.2	28.9	24.5	60.5	65.0
	5-6		61.9	61.1	0	3.9	38.1	35.0	61.9	57.2
	7-8		68.3	57.7	4.9	3.4	26.8	39.0	63.4	54.3
	9-12		48.8	58.6	19.5	3.0	31.7	38.4	29.3	55.6
Girls:	2-4		50.0	74.5	0	5.1	50.0	20.3	50.0	69.4
	5-6		68.8	64.7	6.2	3.6	25.0	31.6	62.6	61.1
	7-8		72.2	66.2	0	3.0	27.8	30.8	72.2	63.2
	9-12		66.7	68.0	14.8	8.4	18.5	23.6	51.9	59.6
II. Father										
Boys:	2-4		39.1	57.4	8.3	8.6	52.6	34.0	30.8	48.8
	5-6		48.4	40.3	4.3	4.6	47.3	55.1	44.1	35.7
	7-8		54.5	32.7	3.4	4.2	42.0	63.1	51.1	28.5
	9-12		43.8	41.0	18.7	4.4	37.5	54.6	25.1	36.6
Girls:	2-4		35.3	64.2	5.9	3.3	58.8	32.5	29.4	60.9
	5-6		48.7	43.3	12.8	2.9	38.5	53.8	35.9	40.4
	7-8		34.1	41.0	19.5	2.8	46.3	56.2	14.6	38.2
	9-12		42.6	52.3	24.6	8.4	32.8	39.2	18.0	43.9
III. Same-sex peers										
Boys:	2-4		22.9	68.0	12.2	19.8	64.9	12.2	10.7	48.2
	5-6		29.6	66.8	9.2	18.2	61.2	15.0	20.4	48.6
	7-8		42.2	65.7	11.1	20.8	46.7	13.5	31.1	44.9
	9-12		40.9	65.4	10.6	12.8	48.5	21.8	30.3	52.6
Girls:	2-4		36.7	85.4	16.7	6.7	46.7	7.8	20.0	78.7
	5-6		52.0	82.2	24.0	9.1	24.0	8.6	28.0	73.1
	7-8		54.5	78.4	22.7	11.3	22.7	10.3	31.8	67.1
	9-12		34.3	66.3	20.0	23.2	45.7	10.4	14.3	43.1
IV. Opposite-sex peers										
Boys:	2-4		32.6	51.8	39.8	35.7	27.6	12.5	-7.2	16.1
	5-6		32.7	52.1	40.0	39.4	27.3	8.5	-7.3	12.7
	7-8		40.8	47.1	40.8	45.6	18.4	7.2	0	1.5
	9-12		63.0	47.5	20.0	39.9	12.0	12.6	48.0	7.6
Girls:	2-4		20.6	42.3	38.2	47.2	41.2	10.5	-17.6	-4.9
	5-6		31.6	31.1	36.8	55.4	31.6	13.6	-5.2	-24.3
	7-8		53.7	39.4	34.1	51.3	12.2	9.3	19.6	-11.9
	9-12		61.7	47.2	25.0	38.2	13.3	14.6	36.7	9.0

clinical status" interaction recorded as non-significant in Table 2). Instead, the preponderance of positive attitudes toward the mother in both samples is consistent with the author's hypothesis that the cultural stereotype of the good, loved mother would be reflected in the sentence completions of both the clinic and the school groups.

TABLE 2. MULTIDIMENSIONAL CHI SQUARE ANALYSIS OF POSITIVE, NEGATIVE, OR NEUTRAL ATTITUDES TOWARD PARENTS AND PEERS AS A FUNCTION OF SEX, GRADE LEVEL, AND CLINIC STATUS

Source	df.	Chi square value			Opposite-sex
		Mother	Father	Like-sex peers	peers
Attitude \times sex	2	28.14†	17.41†	121.45†	10.26†
Attitude \times grade	6	43.39†	100.44†	17.95†	23.53†
Attitude \times clinical status	2	3.41	29.58†	474.73†	44.94†
Attitude \times status \times grade	6	19.21†	48.04†	98.86†	46.20†
Attitude \times status \times sex	2	2.09	9.46†	130.90†	8.42*
Attitude \times sex \times grade	6	15.27*	26.04†	63.17†	34.86†
Status \times grade	3	0.27	26.56†	38.35†	31.26†
Status \times sex	1	40.43†	78.66†	145.40†	7.10†
Grade \times sex	3	17.78†	27.85†	26.46†	39.63†
Status \times sex \times grade	3	2.65	30.18†	18.55†	42.92†
Attitude \times status \times sex \times grade	6	11.01	10.06	74.20†	2.79
Total	40	183.66†	404.27†	1210.06†	291.11†

* $P < 0.05$ † $P < 0.01$

A consistent sex difference occurs in both the school and the clinic samples, with the girls generally exceeding the boys in the expression of positive attitudes ("attitude by sex" interaction in Table 2 is significant but triple interaction with clinical status is not significant). Developmental trends, on the other hand, differ in the school and clinic samples. (See significant "attitude by status by grade" interaction in Table 2.) For example, the young clinic children in grades 2-4 express fewer positive responses to the mother than the school sample. Then, when the normal children are decreasing in favourable attitudes toward the mother, the clinic children in grades 7-8 show a peak in positive feelings. At the high-school level, the clinic children show a greater drop in positive attitudes than the normals.

Attitude toward father. The χ^2 data presented in Table 2 indicate that sex, grade, and clinical status all have significant interacting effects so that no general trend can be delineated for a grade, sex, or clinical status grouping.

Both sex and developmental trends differ in the clinic and school samples (Fig. 2). The normal children are maximally positive in attitude toward the father in grades 2-4, dip in net positive responses in the middle grades and level off in the high school years with a net percentage of positive responses below that characteristic of the younger children. The clinic children peak on positive responses later (grades 5-6 for girls and 7-8 for boys), decline more sharply than the normal children in net positive responses, and finally show a lower net preponderance of positive responses at the high school level. At every grade level the clinic boys exceed the clinic girls in the net preponderance of positive responses toward the father. In the school sample, on the other hand, the greater incidence of neutral responses on the part of the normal boys results in their showing a consistently smaller net preponderance of positive responses than the normal girls.

Attitudes toward same-sex peers. The general trends attributable to clinic status alone are quite striking (note significant "attitude by clinical status" interaction in Table 2): the clinic children express a much lower percentage of positive attitudes toward same-sex peers at every grade level (Fig. 3). However, as the significant higher-

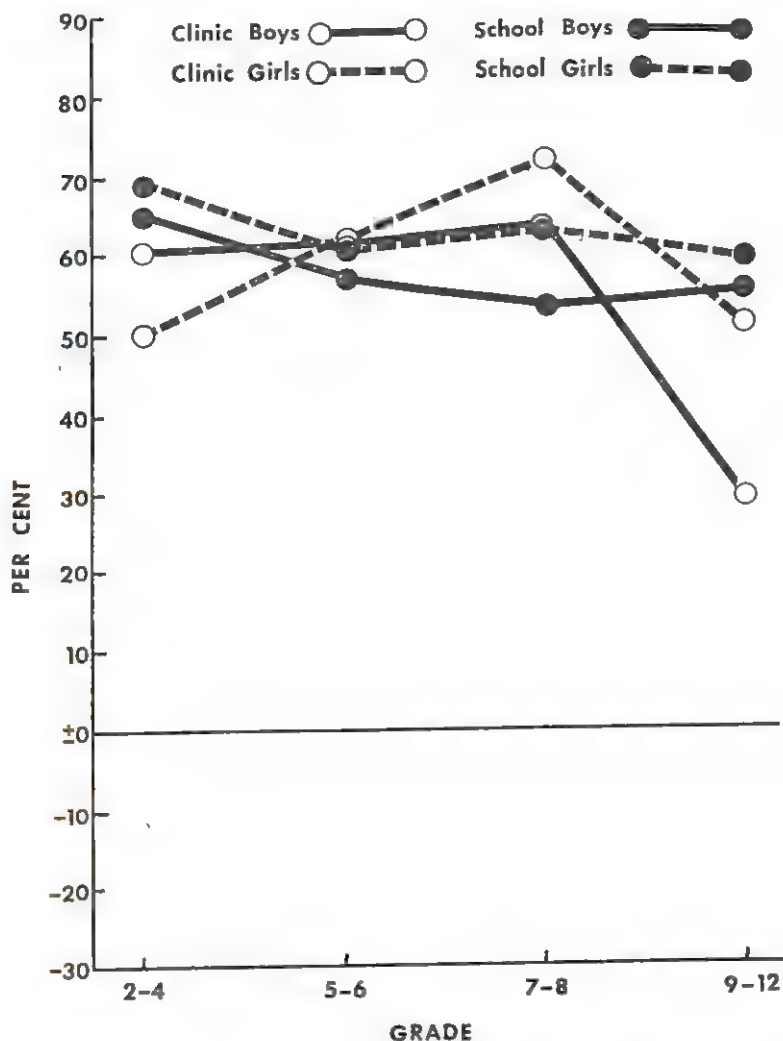


FIG. 1. Net percentage of positive attitudes toward mother rated from sentence completions. School sample data was recomputed from Harris and Tseng (1957).

order interactions in Table 2 reveal, these trends are not of constant magnitude over both sexes and all grade levels. Girls in both the clinic and the school samples show a higher net percentage of positive responses than do the corresponding boys until the high school years, when the trend reverses.

Attitudes toward opposite-sex peers. Again the presence of so many significant interactions makes it difficult to delineate general trends (Table 2). The most striking finding (Fig. 4) is the difference in developmental trends in the clinic and the school samples. (See significant "attitude by status by grade" interaction in Table 2.) Over grade levels, the normal boys show a decrease in the percentage of positive attitudes expressed toward the opposite sex. The clinic boys reverse this trend, and at the high school level, express significantly more positive attitudes than the normal boys. The clinic girls, on the other hand, simply exaggerate the developmental trend mani-

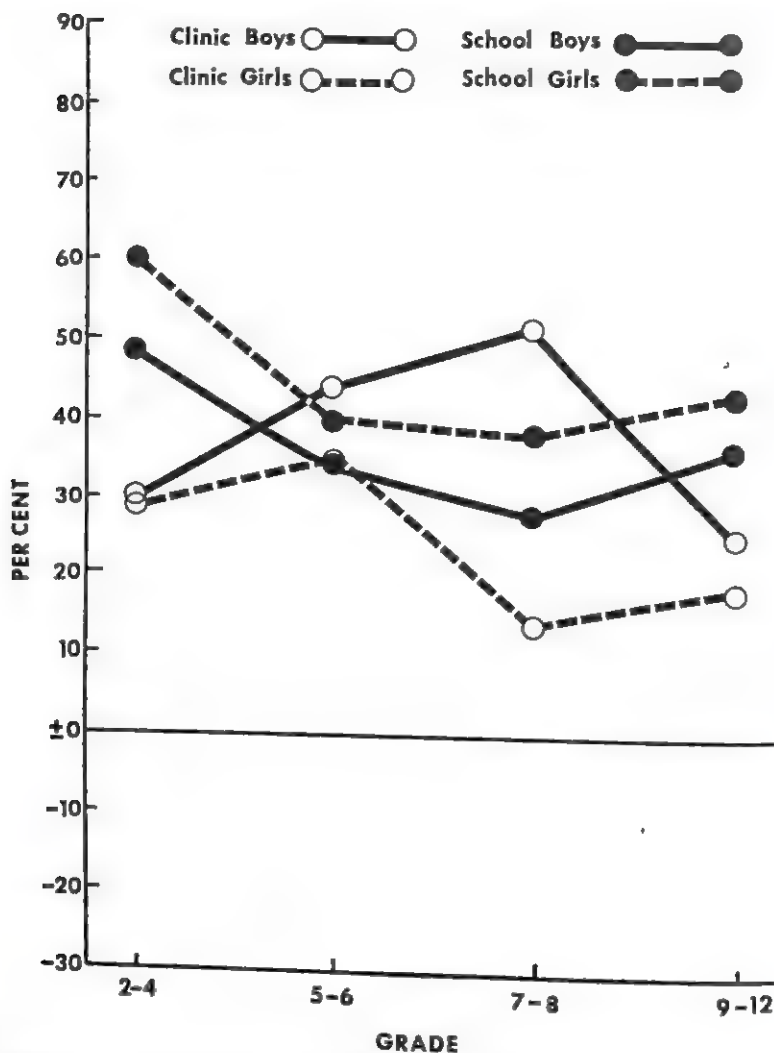


FIG. 2. Net percentage of positive attitudes toward father rated from sentence completions.

festated by the normal girls: they show a greater increase in positive attitudes toward the opposite sex than the normal girls manifest.

Discussion of differences between school and clinic samples

The data elicited by the four stimulus figures (mother, father, same-sex peers, opposite-sex peers) are too complex to be described by the authors' initial hypotheses. There is no one, consistent difference in the interpersonal attitudes of the school and clinic samples. The clinic children are not uniformly more negative in their interpersonal attitudes than the normal children, nor is the mother the only figure toward whom they express attitudes as favourable as those of the school sample.

The data do not, of course, permit the formulation of definitive explanations. Possible rural-urban differences cannot be entirely discounted since the clinic sample

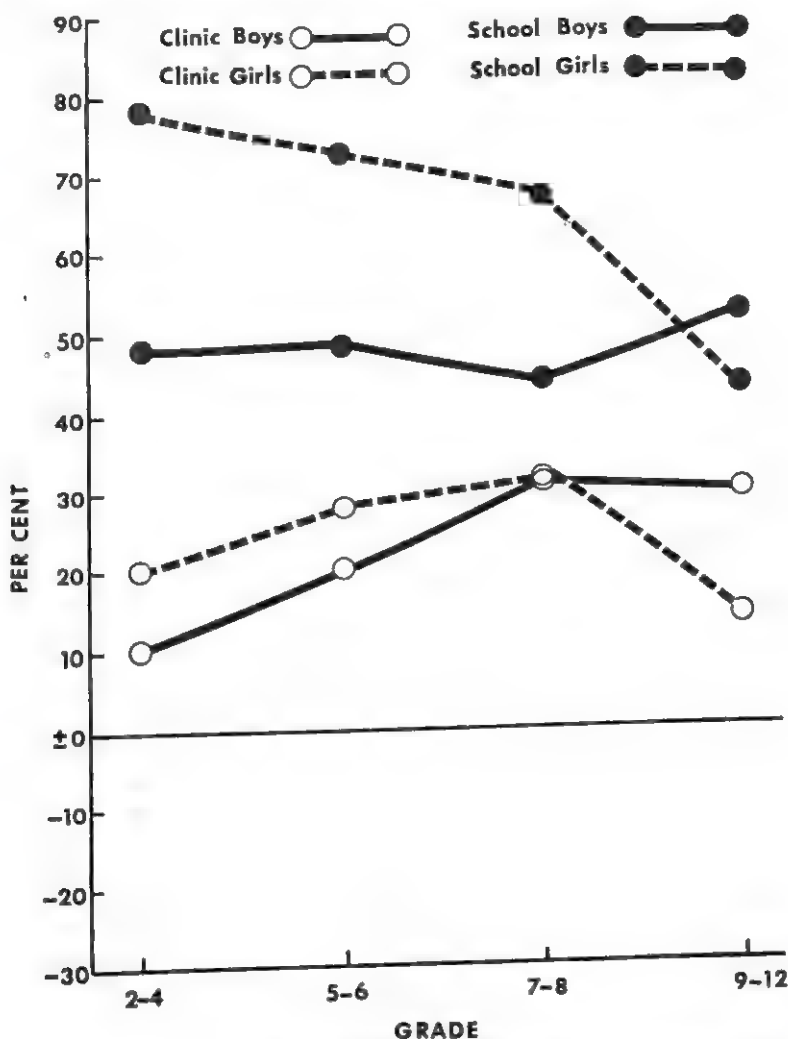


FIG. 3. Net percentage of positive attitudes toward same-sex peers rated from sentence completions.

was obtained from a large metropolitan area while the school sample was obtained from a small town. However, the particular differences obtained do not appear to be readily explained in terms of place of residence.

The clinic versus school sample differences might be plausibly interpreted in terms of the operation of four factors. First, there is the developmental level of the child with its particular tasks and limitations. Secondly, there is the presumed greater inadequacy of the clinic child's parents. Several investigators, such as Newell (1934) and Goodstein and Rowley (1961), have found the parents of disturbed children to be less adequate than the parents of normal children. Thirdly, there is the clinic child's own limited adaptive capacity as evidenced by his being brought to the clinic. Finally, there are the external and internal pressures to express conventionally appropriate attitudes. The clinic child's reactions at each grade level might be seen as a particular type of equilibrium between these four factors.

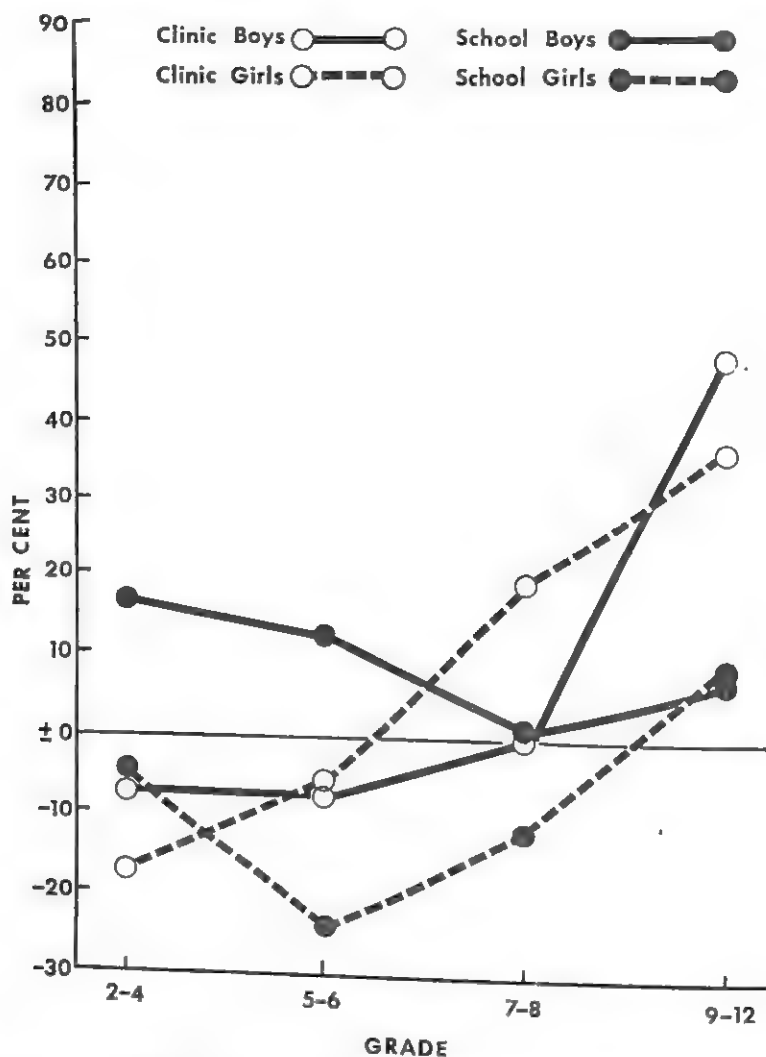


FIG. 4. Net percentage of positive attitudes toward opposite-sex peers rated from sentence completions.

For example, the young child's realistic dependence upon the parent would make it hard to express predominantly negative attitudes toward even an incompetent parent. On the other hand, the young child, by reason of his inexperience, is less adept at concealing emotions either from himself or others. Therefore, the young clinic child expresses slightly less positive, and more neutral attitudes, toward parental figures as compared with the normal group. In fact, the youngest clinic group shows the greatest under-production of positive responses, and the highest proportion of neutral responses, toward all of the stimulus figures. (See Table 1.) This reversal of the developmental trend found in the school sample, and the generally greater production of neutral responses by the clinic children, suggests that the neutral response may reflect not only objectivity (Harris and Tseng, 1957), but ambivalence as well.

In the middle years, developmental lag attributable to the clinic child's poor adaptive ability, combined with increasing defensive capacity, may account for the belated upsurge of positive attitudes toward the parents. Defensiveness would seem to be particularly involved in the clinic boys' pattern of exceeding the clinic girls in positive attitudes toward the father, while the normal boys express more neutral attitudes in contrast to the positive responses of the normal girls. However, neither internal nor social pressures demand that peers elicit attitudes as positive as those appropriate for parents. Therefore, the clinic children can continue to reveal their inability to respond positively to peers.

At adolescence, the clinic children with their lesser adaptive skills, exaggerate the normal increase in negative attitudes toward the parents. Their expression of exaggerated interest in the opposite sex may well be multiply determined: they may genuinely feel strongly attracted to opposite-sexed peers because of a strong need to compensate for the affection they feel they missed from their parents; and they may defensively exaggerate their interest in order to prove their sexual adequacy to themselves and others. The data do not permit evaluation of the relative importance of these two explanatory factors.

While previous studies have stressed the negative attitudes disturbed children express toward other people, the present developmental analysis reveals a highly complex interaction between psychopathology and interpersonal attitudes.

Parental absence, parental attitude, and attitude toward parent

The Harris and Tseng (1957) data on grade and sex trends in attitudes toward the parent were not evaluated in terms of the parent's attitude toward and availability to the child. Therefore, the comparisons between the school and clinic samples could not take account of these factors. However, it was possible to explore their effects in a limited proportion of the clinic sample. The largest reduction in sample size was the result of eliminating all cases with a foster, adoptive, or step-parent since otherwise the referent of the child's sentence completion would be ambiguous. The analysis of the data regarding the effect of paternal attitude was subject to one further limitation upon sample size: information regarding the father's attitude toward the child was available for only that third of the cases who were tested prior to 1960 when the father item was removed from the case summary code card. In view of these considerations, any conclusions drawn from the results to be presented must, of course, be qualified in terms of the restrictions upon the sample.

Effect of paternal absence or presence. The data regarding the effects of paternal absence are presented in Table 3. As was hypothesized, the presence or absence of the father is a significant factor for both boys and girls. However, the reason for the absence makes no difference in the pattern of attitudes expressed. There was no support for the authors' hypothesis that the dead fathers might be idealized while the live, absent fathers might be viewed more negatively. Instead, the children of absent fathers produced predominantly neutral responses no matter what the reason for the father's unavailability.

The tendency of the father-separated children to produce more neutral responses to the father corroborates the findings of Bach (1946). The under-production of negative responses replicates the results obtained by both Bach (1946) and Sears,

TABLE 3. RELATIONSHIP BETWEEN CHILD'S ATTITUDE TOWARD NATURAL FATHER, PATERNAL ABSENCE, AND REASON FOR PATERNAL ABSENCE

Child's sex and paternal availability	Attitudes toward father				Chi square†
	Negative	Neutral	Positive	Total	
Boys					
Father present	23 (9.5%)	105 (43.2%)	115 (47.3%)	243 (100.0%)	12.28†
Father absent	1 (1.4%)	45 (65.2%)	23 (33.3%)	69 (99.9%)	
Boys: father absent					
Marital separation	1 (1.8%)	37 (66.1%)	18 (32.1%)	56 (100.0%)	0.39
Father dead	0 (0.0%)	8 (61.5%)	5 (38.5%)	13 (100.0%)	
Girls					
Father present	17 (15.7%)	43 (39.8%)	48 (44.4%)	108 (99.9%)	7.14*
Father absent	3 (8.6%)	23 (65.7%)	9 (25.7%)	35 (100.0%)	
Girls: father present					
Marital separation	3 (10.7%)	18 (64.3%)	7 (25.0%)	28 (100.0%)	0.82
Father dead	0 (0.0%)	5 (71.4%)	2 (28.6%)	7 (100.0%)	

* $P < 0.05$.† $P < 0.01$.‡All chi square values tabulated have *df.* of 2.

et al. (1946) in studies of non-clinical samples. However, while Bach's father-separated group accompanied their under-emphasis on negative reactions by an over-production of positive responses idealizing the father, the present clinic sample did not. This difference is all the more significant in view of the general tendency of the SCT to elicit positive stereotypes. The implications of the clinic children's under-production of negative responses are less clear. Both the present clinic sample and the non-clinical samples studied by Bach and by Sears, *et al.* might reveal deep-lying hostile fantasies in response to psychoanalytic investigation comparable to that used to elicit the exaggeratedly negative father-fantasies produced by the cases described by Neubauer (1960). However, at the relatively conscious level of personality tapped by the SCT, the clinic children produce neither the exaggeratedly positive nor the exaggeratedly negative father-images discussed in previous studies.

Effect of parental attitude. The data in Table 4 do not support the authors' hypothesis that rejecting parents would be viewed more negatively than non-rejecting parents. Even the clinic girls, who show some trend toward realistically differentiated responses, do not express negative attitudes toward rejecting mothers; instead, they simply produce more neutral attitudes than the daughters of accepting mothers. The present findings bear some points of similarity to Newell's (1960) finding that only 54 per cent of his clinic sample of twenty-four children of rejecting mothers expressed

TABLE 4. CONTINGENCY TABLES SHOWING RELATIONSHIP BETWEEN CHILD'S ATTITUDE TOWARD NATURAL PARENT AND PARENT'S ATTITUDE TOWARD CHILD

Child's sex and parent's attitude	Child's attitude			Chi square*
	Negative	Neutral	Positive	
I. Attitude toward father in:				
Boys, father hostile	4	12	10	0.98
Boys, father non-hostile	3	19	17	
Girls, father hostile	1	6	3	4.44
Girls, father non-hostile	5	3	7	
II. Attitude toward mother in:				
Boys, mother hostile	3	14	15	2.91
Boys, mother non-hostile	6	29	62	
Girls, mother hostile	0	8	6	10.39†
Girls, mother non-hostile	4	5	27	

*All chi square values tabulated have *df.* of 2.

† $p < 0.01$.

the feeling that the mother showed a lack of affection, while 58 per cent of these children named the mother as the preferred parent in the course of a psychiatric examination. The findings of Newell and the present authors might be explained in terms of Riese's (1962, pp. 42, 133, 457) interpretations regarding the attitudes toward parents revealed by deprived Negro children at a psychiatric clinic. The desire to maintain self-respect vis-à-vis outsiders; the need to ward off the implication of unlovability inherent in being unloved; the need to cling to the fantasy that the rejecting parents would redeem themselves; and guilt over turning to new love objects—all were seen as sustaining the children's denial of the reality of parental, particularly maternal, rejection. There are no data available regarding the extent to which non-clinical groups produce this type of defensively unrealistic reaction in response to direct probing.

CONCLUSIONS

- (1) Differences between the children in the clinic and school samples in regard to interpersonal attitudes depend upon the sex and grade of the children and the particular stimulus figures involved. The clinic children are not consistently more negative, more positive, nor more neutral than the school sample.
- (2) Children in both the clinic and the school samples express predominantly favourable attitudes toward the mother at all grade levels.
- (3) Children in the school sample are maximally positive in attitude toward the father in grades 2-4, while the clinic children peak on positive attitudes slightly later. The adolescent decline in positive attitudes toward the father is more marked in the clinic children.
- (4) As compared with the school sample, the clinic children express a lower percentage of positive attitudes toward same-sex peers at every grade level.

(5) The clinic children show an exaggeration of the normal reaction toward opposite-sex peers at adolescence: they express a higher percentage of positive attitudes than the school sample.

(6) The clinic children of absent fathers are significantly less positive in their attitudes toward the father than clinic children with fathers in the home.

(7) In the clinic sample, neither rejecting fathers nor rejecting mothers elicit a higher proportion of negative attitudes than accepting parents.

SUMMARY

A sample of child guidance patients was compared with a sample of school children previously studied by Harris and Tseng (1957) with regard to attitudes toward parents and peers as revealed in responses to a sentence completion test. The clinic children could not be differentiated by any single response trend. Instead, their reactions (and their differences from the normal children) depended upon their age, their sex, and the particular person toward whom they were reacting. They were, for example, almost as overwhelmingly positive in their attitudes toward the mother as were the normal children. They were considerably less positive toward like-sex peers; and, during adolescence only, were exaggeratedly positive toward peers of the opposite sex. Attitudes toward parent figures were also evaluated in relationship to factors such as parental presence and parental attitude.

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INTACTNESS OF THE HOME AND BEHAVIOURAL PROBLEMS IN CHILDREN

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INTRODUCTION

THERE seems to be general acceptance of the notion, at least in Western culture, that the fullest social and personal development of the child requires an intact family. Any disruption of the family, physical or functional, is considered detrimental; this may include absence of the father for extended periods because of the requirements of his job, hospitalization of one of the parents, as well as death, separation, divorce, and desertion. The belief in the desirability of the intactness of the family is so pervasive that often marriages are held together even though the violent marital discord and tension may be detrimental to the child's welfare. It is with the physically broken homes that this paper is concerned.

Empirical data support the picture of the malevolent effects of the broken home on the development of the child. A study conducted by the White House Conference of 1934 emphasized the significance of the home for personality development of the child and the damage resulting from the broken home. The broken home has been shown to be a factor in juvenile delinquency (Glueck and Glueck, 1950; Monahan, 1960), in schizophrenia (Pollack, Malzberg and Fuller, 1939; Hilgard and Newman, 1961), in depression in psychiatric patients (Beck, Sethi and Tuthill, 1963), in mental disturbance among children in lower socio-economic homes (Coblener, 1963), in accident-proneness in children (Krall, 1953), and in adverse performance on intelligence and personality tests (Altus, 1958; Leichty, 1960; Stephens, 1961; Maxwell, 1963). However, other studies have found no relationship between broken homes and the factors mentioned above (Burchinal, 1958; Myers and Roberts, 1959; Pitts *et al.*, 1965). Others have attributed the relation to the operation of a third variable; for example, the relationship between schizophrenia and broken home has been explained by the extreme instability of the parents of schizophrenics (Nye, 1957; Hilgard, Newman and Fisk, 1960). Employment of the mother outside the home (Rouman, 1956) or temporary absence of the adult male from the home (Stolz, 1954; Lynn and Sawrey, 1959; Wilkins, 1960) have been found to be associated with adjustment difficulties in childhood. But here again contradictory results have been found with respect to outside employment of the mother (Stolz, 1960; McCord and McCord, 1963; Moore, 1963).

In the studies referred to above, there are two limitations. The first is the use of indices of children's adjustment based primarily on scores on personality scales and adjustment inventories, or on ratings by teachers, parents, social workers, or by the investigators themselves, rather than on more objective criteria of behaviour considered

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maladaptive, e.g. delinquency. The second is that, in general, the broken home has been treated as a single entity, though in these studies there was great disparity as to what constituted a broken home. This might mean a home broken by divorce, separation, widowhood, desertion, or a combination of these; it might also refer to a home with an unmarried parent. It seems reasonable to assume that the circumstances surrounding divorce, separation, widowhood, and unwed parenthood are sufficiently different from one another to warrant separate treatment. The present study was designed to overcome the two limitations mentioned above by investigating the differential relationship of the various types of homes to the personal and social adjustment of children, and by utilizing as the criterion of adjustment, the behaviour of the child considered by the family or community to be so maladaptive as to require referral to a psychiatric outpatient clinic for treatment.

METHOD

From a broader study of children referred to outpatient psychiatric clinics in Philadelphia (Tuckman and Lavell, 1958), data on intact or broken homes were available for 1767 children from the total clinic population of 1813. Such information, alone or in combination with other factors, was not available for forty-six children. Of the 1767 children where the status of the home was known, information on race was not available for 132 children. However, the cases of unknown race were retained in the sample because they were distributed proportionately to the different types of home, indicating that the absence of information resulted from random factors.

Of the 1767 children, 67 per cent were male and 33 per cent female; the over-representation of boys is typical in psychiatric outpatient clinics (Anderson and Dean, 1956; Gilbert, 1957; Roach, Gurrslin and Hunt, 1958). Children under 6 years were under-represented in the clinic population (16 per cent in the clinic and 39 per cent in the Philadelphia general population) (U.S. Bureau of Census, 1962), while those between 6 and 11 were greatly over-represented (51 per cent and 34 per cent, respectively); children between 12 and 17 were slightly over-represented (32 per cent and 27 per cent, respectively). Of the 1635 children for whom information on race was available, the distribution showed 76 per cent were white and 24 per cent non-white, approximately the same proportion as that found in the general population (U.S. Bureau of Census, 1962).

Children were classified by type of referral problem according to categories developed in the earlier study. The twelve categories were:

- (1) Anxiety and neurotic symptoms, e.g. fears, nail biting, depression, inferiority feelings, perfectionism, tendency to worry, nightmares.
- (2) Severe psychiatric symptoms, e.g. bizarre thinking or behaviour, conversion symptoms, self-harm, ritualistic behaviour.
- (3) Withdrawal behaviour, e.g. daydreaming, passivity, seclusiveness, shyness.
- (4) School problems, e.g. poor school work, truancy, cheating, school phobia, tardiness.
- (5) Mental retardation.
- (6) Aggression, e.g. temper tantrums, disobedience, cruelty, running away from home.
- (7) Anti-social behaviour, e.g. stealing, fire-setting, delinquency.
- (8) Difficulties in interpersonal relationships, e.g. sibling rivalry, quarrelsome with playmates, "show-off".

- (9) Somatic symptoms, e.g. convulsions, asthma, overweight, diarrhoea.
- (10) Problems of habit formation, e.g. enuresis, sleep problems, feeding problems.
- (11) Sexual problems.
- (12) Miscellaneous, e.g. emotional immaturity, slowness, inattentiveness.

Problem categories and not number of problems within the category were used. For example, a child referred to a clinic because of poor school work, truancy, and cheating in class, was counted as one individual with one school problem. The number of categories of problems per child ranged from one to eight; one reported in 28 per cent of the cases, two in 34 per cent, three in 24 per cent and four to eight in 14 per cent.

Six types of homes were identified: (1) intact homes (married), and those in which parents were (2) separated, (3) divorced, (4) widowed, (5) unmarried and (6) other. The last category included broken homes, the status of which was not explicit from the clinic records, and also included a few cases of desertion.

RESULTS

Children from intact families were under-represented in the clinic sample, while those from each of the five types of broken homes were over-represented. Families with intact marriages represented about 90 per cent of families in the Philadelphia general population with children under age 18 (U.S. Bureau of Census, 1962), compared to 67 per cent in the clinic population. By contrast, families where the parents were separated constituted 9 per cent in the clinic and 4 per cent in the general population; for the divorced, 8 per cent and 2 per cent; for the widowed, 8 per cent and 3 per cent; and for the unmarried, 5 per cent and 1 per cent (all respectively). All these differences between the clinic population and the expected frequency based on the general population are statistically significant (P 's < 0.001).

Table 1 presents two comparisons of the data on type of home and the twelve categories of behavioural problems for which children were referred to the clinic: (a) between intact homes and all broken homes combined, and (b) between intact homes and each of the five types of broken homes. This way of presenting the data makes it possible to show differential relationships of the several types of broken homes which may be obscured by lumping them all together. The first comparison shows that children from broken homes had a greater per cent of referrals for school problems, aggression, and antisocial behaviour; whereas children from intact home, had a greater per cent for problems of habit formation. In the second comparisons certain important findings emerged in contrast to the gross comparison above: (1) differences in anxiety (and neurotic symptoms) became statistically significant, (2) school problems no longer differentiated children from different types of homes, (3) the reliability of the differences for problems of aggressive behaviour increased from the 0.05 to the 0.01 level, and (4) the large differences between per cents for the five types of broken homes showed that only certain of these were significantly different from the intact family or from each other.

For problems of anxiety and neurotic symptoms the widowed home had the greatest per cent of referrals; followed by the married, the separated, the divorced, the "other", and the unmarried in that order. For problems involving aggressive behaviour, the divorced showed the greatest per cent of referrals, followed by the

TABLE 1. TYPE OF HOME AND BEHAVIOURAL PROBLEMS IN CHILDREN

Types of homes	N	Per cent showing problem											
		A.N.S.	S.P.S.	Sch. P.	Agg. B.	Anti. B.	W.B.	S.S.	H.F.	Sex P.	M.R.	I.R.	Misc.
Intact (married)	1183	41	7	40	42	7	13	16	25	3	7	18	10
All broken	584	37	8	46	47	13	11	14	17	4	7	15	9
<i>P</i> *		N.S.	N.S.	< 0.05	< 0.05	< 0.01	N.S.	N.S.	< 0.01	N.S.	N.S.	N.S.	N.S.
Intact (married)	1183	41	7	40	42	7	13	16	25	3	7	18	10
Separated	152	37	10	43	44	9	9	12	18	5	9	14	6
Divorced	137	36	6	45	59	20	10	11	17	4	3	12	12
Widowed	137	46	9	45	40	8	15	15	20	3	6	20	9
Unmarried	82	27	9	56	49	16	9	18	13	5	9	11	5
Other	76	32	5	42	42	14	11	17	16	4	13	17	11
<i>P</i> †	N.S.	< 0.05	N.S.	N.S.	< 0.01	< 0.01	N.S.	N.S.	< 0.01	N.S.	N.S.	N.S.	N.S.

*The significance values of the obtained χ^2 s in this column refer to the 2-way comparison of *all* broken homes, undifferentiated by type, with the intact (married) homes; *df.* = 1.

†The significance values of the obtained χ^2 s in this column refer to the 6-way comparison among the different types of homes, i.e. the intact (married) and the 5 different types of broken homes; *df.* = 5.

A.N.S.—Anxiety and neurotic symptoms

S.P.S.—Severe psychiatric symptoms

Sch. P.—School problem

Agg. B.—Aggressive behaviour

Anti. B.—Anti-social behaviour

W.B.—Withdrawal behaviour

S.S.—Somatic symptoms

H.F.—Habit formation

Sex P.—Sex problems

M.R.—Mental retardation

I.R.—Interpersonal relations

Misc.—Miscellaneous

unmarried, the separated, the "other", the married and the widowed. For antisocial behaviour, the divorced also showed the highest per cent of referrals; followed by the unmarried, the "other", the separated, the widowed, and the married. For problems surrounding habit formation, the married showed the highest referral per cent, followed by the widowed, the separated, the divorced, the "other", and the unmarried.

For the four problems differentiating the six types of homes, separate analyses were made for males and females, for whites and non-whites, and for the three age groups: less than 6 years, 6-11 years, and 12-17 years. These are shown in Table 2.

TABLE 2. TYPE OF HOME AND BEHAVIOURAL PROBLEMS IN CHILDREN: SUBGROUP COMPARISONS*

Subgroup	Type of home	Per cent showing problem				
		N	Anxiety and neurotic symptoms	Aggressive behaviour	Anti-social behaviour	Habit formation
Male	Intact	797	38	44	8	24
	Separated	100	37	44	14	19
	Divorced	90	31	64	27	12
	Widowed	82	45	49	7	21
	Unmarried	59	27	53	17	14
	Other	50	30	44	10	20
	P†		N.S.	< 0.05	< 0.01	N.S.
Female	Intact	386	47	40	6	29
	Separated	52	37	44	0	17
	Divorced	47	44	49	11	26
	Widowed	55	44	35	9	18
	Unmarried	23	26	39	13	13
	Other	26	35	38	15	8
	P†		N.S.	N.S.	N.S.	< 0.05
White	Intact	933	45	42	7	25
	Separated	76	42	46	9	26
	Divorced	98	39	53	19	13
	Widowed	82	49	41	7	21
	Unmarried	23	26	43	13	22
	Other	35	37	37	9	9
	P†		N.S.	N.S.	< 0.01	< 0.01
Non-White	Intact	164	28	44	11	20
	Separated	64	33	47	9	9
	Divorced	29	34	86	28	28
	Widowed	43	44	53	12	12
	Unmarried	54	28	52	17	6
	Other	33	27	48	18	24
	P†		N.S.	< 0.01	N.S.	< 0.05

TABLE 2 (continued)

Subgroup	Type of home	N	Per cent showing problem			
			Anxiety and neurotic symptoms	Aggressive behaviour	Anti-social behaviour	Habit formation
<6 yr.	Intact	244	35	40	1	48
	Separated	21	19	52	0	29
	Divorced	7	43	43	0	43
	Widowed	8	13	25	0	38
	Unmarried	7	29	43	14	14
	Other	4	50	25	0	25
	P†		N.S.	N.S.	Not tested	N.S.
6-11 yr.	Intact	598	43	43	7	25
	Separated	84	38	48	12	20
	Divorced	73	34	56	21	19
	Widowed	64	45	53	6	30
	Unmarried	49	24	53	16	16
	Other	41	24	44	10	20
	P†		< 0.05	N.S.	< 0.01	N.S.
12-17 yr.	Intact	341	41	41	13	10
	Separated	47	43	34	9	11
	Divorced	57	37	65	25	11
	Widowed	65	48	35	11	8
	Unmarried	26	31	42	15	8
	Other	31	39	42	16	10
	P†		N.S.	< 0.05	N.S.	N.S.

*Comparisons were made only for the four problems differentiating the six types of homes.

†Based on χ^2 , $df. = 5$.

Significant differences were found among the six types of home only with the age group 6-11 years for anxiety and neurotic symptoms; with males, non-whites, and age group 12-17 years for aggression; with males, whites, and the age group 6-11 years for problems of anti-social behaviour, and with females, whites and non-whites for problems of habit formation.

Using per cents of referral problems for the six types of homes, the correlation (ρ) between anxiety (and neurotic symptoms) and problems of habit formation was 0.94; between aggression and anti-social behaviour, 0.89. The correlation of anxiety with aggression was -0.71 and with anti-social behaviour, -0.77; the correlation of habit formation with aggression and with anti-social behaviour was -0.65 and -0.83, respectively. The three largest correlations are statistically significant.

DISCUSSION AND CONCLUSIONS

There are several major findings in this study. One is the over-representation in the clinic sample of homes broken by widowhood, separation, or divorce, or of those with an unmarried parent; this suggests to the authors that any type of broken home has harmful consequences for the child's personal and social adjustment. The over-representation might be viewed as a result not of the harmful consequences of broken homes but as a result of greater need and seeking of support under such circumstances. However, if this interpretation were valid, it would be expected that there would be a higher percentage of referrals initiated by the family itself (including physicians), and a lower percentage of referrals involving intervention for children from broken homes than for those from intact homes. An analysis of the source of referral does not support this interpretation: self-referrals (including physicians) accounted for 66 per cent of the referrals from intact homes and 53 per cent from broken homes; by contrast, intervention by schools, court, and social agencies accounted for 47 per cent of the referrals from broken homes and 34 per cent from intact homes ($P < 0.001$). For each type of intervention agency, the percentage of referrals was higher for broken than for intact homes.

Another finding is the differential contribution of the several types of homes to the kind of problems for which the child was referred to the clinic. The correlations among the significant problems suggest that the type of home that is high in aggressive behaviour tends to be the type that is also high in anti-social behaviour but the type that tends to be low in anxiety (and neurotic symptoms) and problems of habit formation, while the type of home that is high in anxiety tends to be the type that is also high in problems of habit formation but low in aggressive and anti-social behaviour. The relationship of the several problems in individual children has not been investigated in this study. However, it may be that aggressive behaviour and anti-social behaviour together are found in some children, and anxiety and problems of habit formation together in others; or are merely different manifestations of the same variables. The latter suggestion is supported by the work of Peterson (1959) who found through factor analysis two primary personality factors, which may be characterized as conduct disorders and neurotic disorders. For example, whether a behaviour is designated as aggressive or anti-social may be a function of the age of the child: the same behaviour may be designated as aggressive in a child of 6 but anti-social in an adolescent of 15. The discrepancy between the incidence of conduct disorders and neurotic disorders found in the different types of homes may be a function of the amount and kind of parental supervision: anxiety and problems of habit formation may be associated with close supervision; aggressive and anti-social behaviour, with absence or laxity of supervision.

Still another finding, implicit in the others, is that the "broken" home should not be considered as a unitary concept. The empirical data suggest that for the significant referral problems the widowed was most like the intact home. This is not surprising since the death of a parent does not occur in most instances under the same circumstances of family interaction as would obtain in other types of broken homes. Unless there were unusual circumstances of prolonged illness, there is little reason to assume that disintegration of intrafamilial relations had occurred prior to the death of the parent. In the separated and divorced homes where there is

greater reason for assuming disintegration in family relationships the empirical data, in general, show greater deviation from the intact with respect to the types of referral problems. However, even here, there were important differences: for some problems the separated and divorced were more like each other; for other problems, the separated were more like the intact and widowed at times, while the divorced were more like the unmarried. There is reason also not to consider the intact home as a single entity but here the differences in family relationships are not so objectively ascertainable as in the case of the various types of broken home. More attention needs to be given to the effect of different types of homes, intact or broken, on the behavioural development of children.

SUMMARY

Referral problems for children in out-patient psychiatric clinics were compared for intact homes and for broken homes in which parents were widowed, divorced, separated, unmarried or "other". All varieties of broken homes were over-represented in the clinic population compared to the general population; intact homes were under-represented. Type of home was significantly differentiated by four referral problems: anxiety and neurotic symptoms, aggression, anti-social behaviour, and problems of habit formation. The evidence suggests that the broken home should not be treated as a unitary concept.

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PRE- AND PERINATAL COMPLICATIONS AND "CHILDHOOD SCHIZOPHRENIA": A COMPARISON OF FIVE CONTROLLED STUDIES*

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INTRODUCTION

OVER the past decade there has been an increasing recognition of the significance of pre- and perinatal events in relation to the later behaviour and functioning of the individual. The amount of evidence which has accumulated leaves little doubt that the search for etiological factors in behaviour pathology must include the pre- and perinatal periods (Montagu, 1962; Sontag, 1960). A series of epidemiological investigations has indicated that there is a significant association between complications of the pre- and perinatal period, and certain neurological, psychiatric and psychological disorders in children: i.e. cerebral palsy, epilepsy (Lilienfeld and Pasamanick, 1954, 1955), mental deficiency (Pasamanick and Lilienfeld, 1955), childhood behaviour disorder (Pasamanick, *et al.* 1956) and reading disability (Kawi and Pasamanick, 1959). The studies indicate that among groups of cases with these disorders the proportion having histories of pre- and perinatal complications, and prematurity, is significantly higher than in groups of matched controls.

The purpose of this report is to examine evidence which has appeared in the literature bearing on the question of whether or not reproductive casualty, specifically pre- and perinatal complications, is significantly related to "childhood schizophrenia". Five investigations have studied the incidence of such complications in groups of cases diagnosed "childhood schizophrenia" (or childhood psychosis†) as compared to groups of normal controls. Tables 1-5 summarize the pertinent features of each study.

METHODS

Although in all the studies a diagnosis of childhood psychosis was made on the basis of psychiatric symptoms, the samples do differ in terms of criteria for inclusion or exclusion on grounds of neurological findings. In the tables under Case sample, statements made by the investigators about the neurological status of the cases are included. Two studies made no mention of neurological findings, but the authors of

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†In the literature pertaining to childhood psychopathology, unlike that dealing with the adult, reference is made to childhood psychosis and childhood schizophrenia interchangeably.

TABLE 1. SUMMARY OF METHODS AND FINDINGS OF VORSTER (1960)

Case sample	Controls	Source of information	
METHODS 15 childhood schizophrenics diagnosed at Washington Univ. Child Guidance Clinic. Ages 4 to 14. 10 male, 5 female. Cases with evidence of "classical brain damage" excluded.	33 normal siblings of the cases. Ages 2 to 25. 19 male, 14 female	Retrospective questionnaire and maternal interview. Birth and hospital records for about 2/3 of cases and controls.	
RESULTS			
	% of subjects having complications		
	Cases	Sibs	P
Pregnancy complications			
Birth and neonatal complications including Prematurity	40%	9%	0.05
Prematurity	53%	6%	0.01
Infantile illness (to 2 years)	7%	3%	NS
Abortion just preceding or following	46%	18%	0.01
	20%	3%	NS

one of these (Taft and Goldfarb, 1964) have published a previous report on their sample (Goldfarb 1961) which indicates that over half had been classified as having some abnormal neurological signs. Vorster (1960) reported that cases with evidence of "classical brain damage" were excluded and that no subjects showed definite evidence of clinical neurological disease, although some did not have complete neurological examinations. Hinton (1963), on the other hand, reported that about three quarters of his sample had some evidence of organic brain disease, and Knobloch and Pasamanick (1962) stated that "In no case was all evidence of organic disease absent". The latter authors view "autistic" and "schizophrenic" behaviours in childhood as symptoms associated with neurological impairment rather than as reflections of a specific "functional" disease entity. They have therefore included in their sample a small number of cases with cerebral palsy, mongolism, hydrocephalus, and other gross abnormalities which are usually excluded by other investigators.

While most investigators attempt to exclude from the diagnosis of schizophrenia, children with evidence of specific neurological disorders or gross neurological abnormality, reviews of representative studies indicate that a large percentage of children with brain impairment are diagnosed as schizophrenic (Pollack, 1958; Pollack and Gittelman, 1964; Sharpe and Eisenberg, 1964). Thus it is difficult to assess the comparability of different samples of "schizophrenic" children.

The second methodological point has to do with the sources of information about pre- and perinatal events. Three studies have obtained all or part of this information

TABLE 2. SUMMARY OF METHODS AND FINDINGS OF KNOBLOCH AND PASAMANICK (1962)

Case sample	Controls	Source of information
<p>METHODS 50 cases with syndrome of early infantile autism diagnosed at clinic of child development, Ohio State Univ. Ages 11 weeks to 9 year. (86% under age 3 at diagnosis). 34 male, 16 female. "In no case was all evidence of organic disease absent."</p>	<p>1. 50 abnormal controls: for each case, the next in file diagnosed psychiatrically abnormal without autism. 23 male, 27 female. Evidence of organic disease very similar to that of autistic cases.</p> <p>2. 50 normal controls: for each case, the next in file diagnosed normal. 27 male, 23 female. This group of lower socioeconomic status than cases and abnormal controls.</p>	<p>Retrospective maternal interview.</p>

RESULTS	Number of subjects having complications				
	Cases	Abnormal controls	Normal control	P Cases vs. Abnormal controls	P Cases vs. Normal controls
				Cases vs. Abnormal controls	Cases vs. Normal controls
Pregnancy complications	24	19	8	NS	<0.01
Abnormal delivery*	7	2	2	<0.05	<0.05
Prematurity (BW)*	2	6	6	NS	NS
Neonatal abnormality*	5	9	5	NS	NS
None	8	13	26	—	—
Unknown	4	1	3	—	—

*Includes only those without pregnancy complications.

from parents' retrospective reports. Although there is ample evidence now (Drake and Ober, 1963; Robbins, 1963; Wenar, 1963) that parents may be relatively inaccurate informants, there is some basis for an assumption that their errors with regard to events of pregnancy and delivery are likely to be errors of omission (Drake and Ober, 1963; Wenar, 1963), thus providing a conservative estimate of the incidence of complications. Errors of omission are also characteristic of the information obtained from hospital and birth certificate records. A measure of comfort with regard to the reliability of parents' retrospective information stems from the

TABLE 3. SUMMARY OF METHODS AND FINDINGS OF HINTON, *et al.* (1963)

Case sample
 Controls
 Source of information

METHODS 62 psychotic outpatients, Children's Psychiatric Research Institute, Ontario. Ages 2-23 years. Mean age 10 years, 39 Male, 23 female. 46 had some evidence of organic brain disease.
 62 consecutive admissions to Children's Hospital for Tonsillectomy. Mean age 6.1 years. 29 male, 33 female.
 Retrospective parent interview, hospital records for cases.

RESULTS

	Number of subjects having complications		
	Cases	Controls	P
Pregnancy complications	17	4	0.01
Birth and neonatal complications (including prematurity)	24	17	NS
Prematurity (BW)	9	6	NS
Severe infantile illness or feeding difficulty	27	7	0.01

TABLE 4. SUMMARY OF METHODS AND FINDINGS OF TAFT AND GOLDFARB (1964)

SUMMARY OF METHODS AND FINDINGS OF TAFT AND GOLDFARB (1964)				
Case sample	Controls	Source of information		
METHODS 29 schizophrenic inpatients. Henry Ittelson Center for Child Research, NYC. Ages 6 to 11 years. 21 male, 8 female.	(1) 39 siblings of the schizophrenic cases. 20 male, 19 female. (2) 34 public school children comparable to cases in age range and socioeconomic background. 17 male, 17 female.	Retrospective maternal interview. Physicians' records, hospital obstetric records.		
RESULTS				
	Mean number of complications			
	Cases	Sibs	Controls	P*
Pregnancy complications				
Boys				
Girls	4.4	3.2	1.9	0.05
Birth and neonatal complications including prematurity	5.4	3.6	1.8	0.05
Boys				
Girls	5.4	2.6	3.9	0.001
	5.1	3.1	4.2	<0.10

*Nonparametric one-way analysis of variance for 3 groups.

TABLE 5. SUMMARY OF METHODS AND FINDINGS OF TERRIS, *et al.* (1964)

Case sample	Controls	Source of information
METHODS 463 childhood schizophrenics from records of children's psychiatric service, Bellevue Hospital, NYC. All born in NYC. Age at diagnosis 2-12 years. 372 male, 91 female.	463 matched controls from NYC birth records: for each case, the next single birth in same hospital, of same sex, race and 5 year maternal age group.	NYC Dept. of Health birth certificate records.
RESULTS		% of subjects having complications
		Cases Controls P
Abnormal delivery		— — N.S.
Prematurity (BW)		9.2% 8.4% N.S.
History of previous stillbirth or abortion		28.6% 17.6% 0.02

fact that two of the investigations (Vorster, 1960; Taft and Goldfarb, 1964), which employed parental reports and hospital records combined, also analysed hospital record data separately, and obtained similar results.

RESULTS

Table 6 summarizes the results of each of the five studies by indicating the significance levels of the differences between cases and controls for each of the variables studied.

TABLE 6. SIGNIFICANCE LEVELS OF DIFFERENCES BETWEEN CASES AND CONTROLS ON PRE- AND PERINATAL VARIABLES FOR THE FIVE STUDIES. (DASHES INDICATE DATA NOT REPORTED FOR THAT VARIABLE)

Variable	Vorster (1960)	Knobloch and Pasamanick (1962)*	Hinton, <i>et al.</i> (1963)	Taft and Goldfarb (1964)	Terris, <i>et al.</i> (1964)
(1) Pregnancy complications	0.05	0.01	0.01	0.05 (boys) 0.05 (girls)	—
(2) Birth and neonatal complications (including prematurity)	0.01	—	N.S.	0.001 (boys) 0.10 (girls)	—
(3) Abnormal delivery	—	0.05†	—	—	N.S.
(4) Prematurity	N.S.	N.S.†	N.S.	—	N.S.
(5) Reproductive loss	N.S.	—	—	—	0.02
(6) Infantile illness or feeding difficulty	0.01	—	0.01	—	—

*Cases vs. normal controls.

†Without pregnancy complications.

Pregnancy complications

All four of the studies which obtained sufficient data on prenatal conditions have reported a significantly higher incidence of complications in the cases as compared to the control samples. It is important to point out that this includes the two studies employing sibling control groups, where the same mother was involved. In three studies (Vorster, 1960; Knobloch, 1963; Hinton, 1963) the reports indicated that the most frequent complications were toxemia, vaginal bleeding and severe maternal illness; the fourth (Taft and Goldfarb, 1964) does not report which of the forty-three complications on the check-list were predominant. Osterkamp and Sands (1962) reported a significantly higher incidence of pregnancy and birth complications in a sample of records of forty-one schizophrenic children, as compared to forty neurotic children. Since the pre- and perinatal variables were not analysed separately, this study had not been included for detailed review.

Birth and neonatal complications

The findings with regard to abnormalities of birth and the neonatal period are less striking than for the prenatal factors and, because the authors have grouped factors differently, less clear cut. Three of the studies reported on the combined incidence of complications of delivery and neonatal abnormalities, including prematurity. Two of these (Vorster, 1960; Taft and Goldfarb, 1964) found a significantly higher incidence of this group of factors among cases, as compared to controls. In the third (Hinton, 1963), the difference was in the same direction but not statistically significant. Terris, *et al.* (1964), and Knobloch and Pasamanick (1962), reported abnormal deliveries separately. The former investigators found no difference between cases and controls while the latter found a significantly higher incidence for cases as compared to normal and abnormal controls. In addition, Knobloch and Pasamanick found no significant differences between their groups in the incidence of neonatal abnormality by itself, i.e. not accompanied by pregnancy or birth complications.

Prematurity

The incidence of prematurity (by birth weight) was reported in four of the studies: no significant differences between cases and controls were found. Zitrin, *et al.* (1964), studying the birth records of a large heterogeneous sample of childhood disorders, reported on "childhood schizophrenics" separately only for the variable of prematurity. They found no significant difference between childhood schizophrenics and matched controls.

Reproductive loss

Two studies reported on the number of stillbirths and abortions resulting from other pregnancies of mothers of cases and controls. Vorster (1960), who used a sibling control group, found that a higher proportion of the births of cases were immediately preceded or followed, in the birth order, by an abortion. However, the difference between cases and sibling controls was not statistically significant and the total number of such cases is too small to draw any conclusions from the trend. Terris, *et al.* (1961) found that a significantly higher proportion of the mothers of cases, as

compared to matched unrelated controls, had had a history of previous stillbirths or abortions. The findings of these two studies cannot really be regarded as being in disagreement because of the difference in what was measured.

Postnatal abnormality

Severe illness and/or prolonged feeding difficulty during the postnatal period (up to two years) occurred significantly more often among the psychotic cases, as compared to controls, in the two investigations which reported such data (Vorster, 1960; Hinton, 1963).

DISCUSSION

The five studies presented, despite their differences in sampling and methodology, offer a considerable degree of unanimity on two points: (1) they indicate a significant association between complications of pregnancy and childhood psychosis; (2) they uniformly suggest that low birth weight, by itself, is not significantly associated with the development of psychosis in childhood.

In addition, a history of previous reproductive loss was found to be significantly more frequent in the mothers of cases, as compared to controls, in one large-sample study. Severe postnatal illness was found to be a significant variable in the two studies which investigated it. The disagreement with regard to birth and neonatal complications may be partly a function of the differences in factors taken into account and the different groupings of factors in these studies.

The overall pattern of these findings, except for the factor of prematurity, is similar to what has been reported by Knobloch, Lilienfeld, Pasamanick, *et al.* for cerebral palsy, epilepsy and mental deficiency. Although, as these authors have pointed out (Lilienfeld, *et al.* 1955), retrospective studies of this type must be interpreted with caution, serious consideration should be given to these indications that brain injuries due to maternal and fetal factors are implicated in at least some proportion of cases which are being diagnosed as "childhood schizophrenia".

The need for further research employing larger samples, in which these pre- and perinatal variables can be analysed independently of one another, is strongly indicated by these findings. Such research is a necessary prerequisite to drawing specific conclusions about the nature of the relationship between pre- and perinatal events and childhood psychosis.

SUMMARY

A review of five investigations is presented, dealing with the incidence of pre- and perinatal complications among samples of childhood schizophrenics, as compared to normal control samples. All of the studies indicate a significant association between complications of pregnancy and childhood psychosis, but they fail to reveal a relationship between low birth weight, by itself, and the development of psychosis in childhood. Some of the studies indicate that a history of previous reproductive loss, severe postnatal illness, and birth complications may also be significant variables. Problems of sampling and methodology, as well as implications of these findings, are briefly discussed.

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MEASUREMENT OF A STRANGER'S INFLUENCE ON THE BEHAVIOUR OF YOUNG CHILDREN WITH THEIR MOTHERS

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INTRODUCTION

THE presence of a stranger, in the person of an interviewing doctor, was thought to influence the occurrence of some characteristic behaviour patterns displayed by young children observed with their mothers in a child psychiatric clinic (Berg 1966).

It was implied that an impulse to flee from the stranger would interfere with the balance between *attachment* behaviour, associated with tendencies to maintain contact with the mother, and *exploration*, concerned with urges to examine the contents of the room; it would also increase the various manifestations of motivational conflict such as eye-rubbing and finger-sucking.

This paper describes an attempt to measure objectively, in an experimental setting, some items of behaviour thought to be connected with *attachment* and motivational conflict, in normal pre-school children observed with their mothers; and to relate the findings to the presence or absence of a strange interviewer and to their mothers' scores on an objective personality test.

PROCEDURE

Seventeen normal pre-school children were obtained in the following way: one of the writers (I.B.) visited a child welfare clinic, regularly, and invited any mother who had brought along a child between 2 and 5 years of age to participate in the investigation. The clinic was situated in a predominantly middle-class area of Edinburgh. Only one mother who promised to co-operate failed to do so. There were eight children aged 2, seven aged 3 and two aged 4.

The mother subsequently brought her child to the Department of Child Life and Health, by appointment. Mother and child were observed together in a playroom through a one-way screen by two of the writers (I.B. and G.S.).

There were two concurrent periods of observation each lasting 20 min. The layout of the rooms is shown in Fig. 1. The mother was requested to remain seated and to influence the behaviour of her child as little as possible. She was told that somebody would ask her some questions for half of the time; this was the third writer (S.J.), who interviewed the mother for one of the 20 min periods. She asked questions about the family circumstances, the child's development, and a number of factors which we thought might influence the amount of *attachment* behaviour such as separations from mother, physical illness and opportunities for playing with other children. A coin was tossed to decide whether S.J. should go into the room during the first or second period, so as to eliminate any trend in the results due to this variable. The

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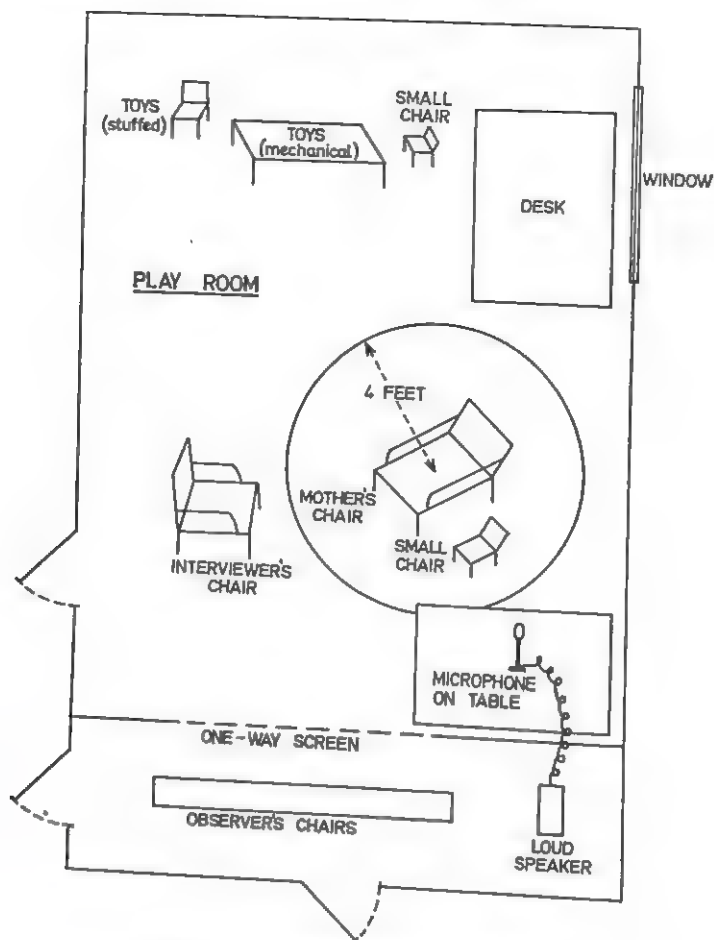


FIG. 1. Diagram of rooms used.

toys consisted of four stuffed animals of various sizes, a plastic doll dressed as a girl, a telephone, about a dozen small movable cars and trucks, and some bricks. Any toys which the child left near his mother were replaced on the toy table by the interviewer between the two concurrent periods of observation.

One of the observers (I.B.) measured the passage of time using a stop-watch. This was reset after 20 min for a further period of the same length. He also noted in narrative form some aspects of the child's behaviour, including: physical contact with mother, movements in the direction of the toys, approaches to mother, speech, finger-sucking, eye-rubbing, rhythmical movements of the limbs, and communication with mother or the stranger. A line was drawn across the record sheet after each 5 min period.

The other observer (G.S.) used a cumulative stop-watch which he set in motion whenever the child entered a chalk circle (of 4 ft. radius) centred on the mother's chair and which he arrested when the child left the circle. In this way, by appropriate synchronization, we were able to measure the amount of time the child spent inside the circle during each 20 min period with an inter-observer reliability of over 95 per cent.

TABLE 1. THE 17 NORMAL CHILDREN GROUPED: *a*, *b* AND *c*, ACCORDING TO THEIR REACTIONS TO THE STRANGE INTERVIEWER

Case number and sex (Boy=B; Girl=G)	Age (years and months)	More than 75% of time inside circle in presence of stranger	More than 75% of time inside circle in absence of stranger	No speech during the first 5 min in presence of stranger	<i>A</i> time in circle in presence of stranger	<i>B</i> time in circle in absence of stranger	<i>A</i> Minus <i>B</i>	Sucking eye-rubbing or rhythmical movements in presence of stranger	Physical contact with mother Rated 0, +, ++		
									in presence of stranger	in absence of stranger	
<i>Group (a)</i>	1 B	2y 4m	Yes	No	No	17 min 35 sec	9 min 20 sec	+8 min 15 sec	No	0	+
	2 B	2y 9m	Yes	No	Yes	20 min 0sec	11 min 15 sec	+8 min 45 sec	Yes	++	0
	3 G	2y 1m	Yes	No	No	19 min 15 sec	4 min 18 sec	+14 min 57 sec	Yes	++	0
	5 B	2y 3m	Yes	No	No	18 min 50 sec	11 min 8 sec	+7 min 42 sec	No	++	0
	11 B	2y 0m	Yes	No	No	17 min 5 sec	11 min 51 sec	+5 min 14 sec	No	++	0
	13 G	3y 3m	Yes	No	No	17 min 2 sec	8 min 1 sec	+9 min 1 sec	Yes	+	0
	16 G	3y 9m	Yes	No	No	16 min 30 sec	9 min 9 sec	+7 min 21 sec	Yes	++	+
					Total	126 min 17 sec	65 min 2 sec	+61 min 15 sec			
<i>Group (b)</i>	6 G	2y 11m	No	No	Yes	1 min 20 sec	0 min 54 sec	+0 min 26 sec	Yes	0	0
	7 G	3y 11m	No	No	Yes	3 min 38 sec	5 min 44 sec	-2 min 6 sec	Yes	0	0
	9 G	2y 1m	No	No	No	9 min 18 sec	10 min 57 sec	-1 min 39 sec	Yes	++	0
	15 B	3y 9m	No	No	Yes	8 min 12 sec	1 min 26 sec	+6 min 46 sec	No	0	0
					Total	22 min 28 sec	19 min 1 sec	+3 min 27 sec			
<i>Group (c)</i>	4 G	2y 11m	No	No	No	10 min 22 sec	10 min 37 sec	-0 min 15 sec	No	0	+
	8 G	2y 11m	No	No	No	5 min 57 sec	8 min 50 sec	-2 min 53 sec	No	0	+
	10 B	3y 11m	No	No	No	1 min 51 sec	10 min 33 sec	-8 min 42 sec	No	0	++
	12 G	3y 1m	No	No	No	4 min 56 sec	4 min 56 sec	0 min 0 sec	No	+	0
	14 G	2y 0m	No	Yes	No	8 min 9 sec	16 min 47 sec	-8 min 38 sec	No	0	0
	17 G	2y 6m	No	No	No	10 min 46 sec	14 min 48 sec	-4 min 2 sec	No	+	+
					Total	42 min 1 sec	66 min 31 sec	-24 sec 30 min			

Towards the end of the project it was decided to ask the mothers to fill in Form A of the Eysenck Personality Inventory (E.P.I.; Eysenck and Eysenck 1964) and requests were sent out by post. Unfortunately only thirteen completed forms were returned out of a possible seventeen.

RESULTS

The seventeen children can be divided into three groups according to their reactions to the strange interviewer (Table 1).

Group (a) Greater amount of proximity and contact. Displacement activities (Case numbers: 1, 2, 3, 5, 11, 13, 16)

This group consists of the seven children who spent longer than 15 min of the 20 min period inside the circle drawn around mother, when the interviewer was present; they stayed there for a considerably shorter time in the stranger's absence (mean 9 min 17 sec, range 4 min 18 sec to 11 min 15 sec). For these children, the difference between the two measurements of time in the circle was always greater than 5 min. Five of these children (cases 2, 3, 5, 11, 16) also showed a high rating of *contact* in the presence of the interviewer but not in her absence. Four of them manifested various behaviours when the stranger was in the room, such as eye-rubbing, which are considered to be displacement activities (Berg 1966).^{*} Only one child failed to speak during the first 5 min when the interviewer was there.

Group (b) Shyness. Displacement activities (Case numbers: 6, 7, 9, 15)

This group includes four children who also demonstrated quite striking changes of behaviour in the presence of the stranger. However, none of them spent as long as even 10 min inside the circle when the interviewer was there, in contrast to Group *a*. And only one of these children remained in the circle appreciably longer in the stranger's presence than in her absence.

Three of them did not speak for the first 5 min of the 20-min period with the stranger there.[†] The fourth child showed the characteristic head-down posture of *shyness* behaviour (Berg 1966). (None of the other 16 children manifested this in the situation described.)

In three instances displacement activities occurred in the stranger's presence.

Only one child displayed a large amount of *contact* when mother was being interviewed.

Group (c) (Case numbers: 4, 8, 10, 12, 14, 17)

The six children in this group spent less than 15 min in the circle in the stranger's presence, and they showed no displacement activities, excessive *contact* or inhibition of speech. Four of them spent as much time in the circle when the stranger was absent as when she was there. However, two of them were over 8 min longer in the circle in the interviewer's absence and in one of these children excessive *contact* was also observed in the interviewer's absence.

Information collected by the interviewer

The seventeen children were living at home with both their parents in all

^{*}None of the seventeen children showed these activities in the interviewer's absence.

[†]Inhibition of speech was considered an expression of shyness. In the absence of the stranger only one child did not say anything in the first 5 min of the session (case 8).

instances. Two of them were only-children; the remainder came from families of two, three, and in one case, four, young children. None had attended nurseries. Birth histories were essentially normal. All but three had had short separations from mother, mainly because of confinements. And without exception, minor behaviour problems, particularly fears, were reported. One child was suffering from a definite mild illness at the time of observation.

TABLE 2. COMPARISON OF THE SIX CHILDREN WHOSE MOTHERS' E.P.I. N_A SCORES WERE 8 OR OVER WITH THE OTHER 7 CHILDREN, WITH REGARD TO DIFFERENCES BETWEEN TIME SPENT IN CIRCLE IN THE TWO SITUATIONS

I Mothers with E.P.I. N_A scores of 8 and over				II Mothers with E.P.I. N_A scores of under 8			
Case number	Difference between situations in time spent in circle (min)	E.P.I. N_A score of mother	E.P.I. E_A score of mother	Case number	Difference between situations in time spent in circle (min)	E.P.I. N_A score of mother	E.P.I. E_A score of mother
(1)	8.25	8	12	(2)	8.75	5	13
(11)	5.23	11	11	(5)	7.70	7	9
(12)	0	14	9	(7)	-2.10	7	16
(13)	9.01	9	3	(8)	-2.88	4	15
(15)	6.77	13	11	(9)	-1.65	7	11
(16)	7.35	15	7	(10)	-8.70	6	8
				(17)	-4.03	5	18
Mean values:	6.1	11.7	8.8		-0.4	5.9	12.9

The mother's E.P.I. scores and the child's behaviour

The thirteen children whose mothers completed the E.P.I. Form A were divided into two groups (Table 2) according to whether the mean neuroticism (N_A) score was 8 or more (Group I) or under 8 (Group II). A score of 8 was chosen as the dividing line since it is slightly greater than the mean for housewives given in the test manual: 7.96 (± 5.39). The mean N_A score for the thirteen mothers was actually 8.54 (± 3.62).

A comparison was made between Groups I and II of the difference between the times spent in the circle in the presence of the stranger and in her absence. The discrepancy between the Group I difference and the Group II difference was 6.5 min; this was statistically significant ($t=2.82$, $P<0.02$).

There was also a significant difference in mean extroversion (E_A) values between Groups 1 and 2 ($t=4.68$, $P<0.001$). However, the meaning of this is not clear.

The E.P.I. is designed so that N_A and E_A scales are independent. In the thirteen mothers there was a small inverse correlation between them which did not attain statistical significance ($r = -0.38$, $P > 0.1$). The mean E_A score for normal housewives given in the test manual is 12.16 (± 4.75); the mean E_A score for the thirteen mothers was similar 11.0 (± 4.6). There was no significant difference between mean "difference scores" for children with mothers of E_A values: 12 or over (cases 1, 2, 7, 8, 17) compared to those under 12 (cases 5, 9, 10, 11, 12, 13, 15, 16).

Six of the group of thirteen children spent over 75 per cent of the time inside the circle in the stranger's presence, but none of them did so in her absence. This was a statistically significant finding ($\chi^2 = 4.167$, $P < 0.05$; using the test described by McNemar for matched samples—Maxwell (1961)—and Yates' correction for continuity). It is worth noting that four out of six children in Group I came from Group *a* compared to two out of seven in Group II.

The age and sex of the child

In Group (*a*) five children out of seven were at the median age of 2 years 9 months or below; whereas in Groups *b* and *c* combined the equivalent numbers were three out of ten (Table 1). These suggestive age differences were however not significant using the Fisher Exact Probability test ($P > 0.10$, Finney 1948). The more powerful Mann-Whitney U-test (Mann and Whitney 1947) also failed to indicate any significant effect of age on the behaviour displayed by the children in Group *a* ($P > 0.05$). A comparison of Groups I and II (Table 2) with regard to age using the Mann-Whitney U-test also showed no significant difference ($P = 0.9$).

There were four boys and three girls in Group (*a*) compared to two boys and eight girls in the remainder (Table 1). This was not a significant difference on Fisher's test ($P > 0.10$). There were three boys and three girls in Group I compared to three boys and four girls in Group II.

DISCUSSION

Some previous investigations have demonstrated that the inclination of young children to remain close to their mothers, touch them, and seek their attention, often referred to as "dependency" behaviour in the literature, is exaggerated when parents are unusually warm and demonstrative (Sears, *et al.*, 1957), or alternatively are indulgent and over-solicitous (Levy, 1943). Dependency has also been shown to vary with the age, sex and personality attributes of the youngsters (Bandura, *et al.*, 1963).

Heathers (1954) noted that toddlers may react to a novel situation by clinging to mother, Jersild, *et al.* (1935) used the reluctance of young children to approach a toy placed near a stranger as a measure of their "fearfulness", and Arsenian (1943) observed the "insecurity" of children in a strange playroom which was lessened by the presence of a familiar adult and by passage of time. These reactions to strange places and persons were found to vary with the age, sex and dependency behaviour exhibited by the child, as well as the degree of parental over-protection (Mussen, 1960).

In the experimental situation reported in this paper, on average, the children spent longer inside the circle drawn around the mother when the interviewer was in the room. It also seemed to us that they generally spoke less in her presence. However,

these measures of behaviour were insufficiently precise to distinguish those children who were more obviously affected by the stranger's presence.

Items of behaviour which were particularly associated with the presence of a stranger were: remaining longer than 15 min in the circle, displacement activities such as eye-rubbing, and to a lesser extent, not speaking for the first 5 min of the session. Some children reacted mainly by *attachment* behaviour (Group *a*) and others mainly by *shyness* (Group *b*). There was evidence of motivational conflict in the form of displacement activities in both groups (Berg, 1966). It remains a fact that a number of subjects were apparently unaffected by the stranger and even showed more *exploration* and less *attachment* when she was there.

It was not possible to draw any significant conclusions about the influence of the age and sex of the child on behaviour although there was a suggestion that younger boys predominated in Group (*a*) (Table 1).

The information collected by the interviewer was unhelpful in deciding what distinguished those who were most obviously affected by her presence. Mothers' scores on the personality test were more encouraging. A positive relationship was established between an N_A score of 8 or more and the child's proximity to mother in the stranger's presence. *Contact* behaviour was usually observed whenever a child came close to his mother and consequently an excessive rating of this was nearly always a reflection of time spent in the circle.

SUMMARY

Seventeen normal pre-school children were observed with their mothers in an experimental setting. Various measurements of their behaviour were made by two observers through a one-way screen. There were two 20-min sessions in one of which the mother was interviewed by a stranger. Mothers subsequently completed the Eysenck Personality Inventory, Form A. Items of behaviour which were associated with the presence of a stranger were: remaining longer than 15 min in a circle drawn around the mother, displacement activities and not speaking for the first 5 min of the session. Proximity to mother in the presence of the interviewer was related to an N_A score of eight or over on the E.P.I.

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THE EFFECTS OF VARIED ENVIRONMENTAL STIMULATION ON THE PERFORMANCE OF SUBNORMAL CHILDREN

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INTRODUCTION

DURING the past twenty years much has been written on the topic of distractibility (Kessel, 1955; Schulman *et al.*, 1963) and methods of education have been devised to minimize the deleterious effects of extraneous stimulation on learning (Strauss and Lehtinen, 1947; Strauss and Kephart, 1955; Cruickshank *et al.*, 1961). The present author (Brown and Clarke, 1963; Brown, 1964 and 1965) indicated that much of the work carried out in this field is contradictory and may partly arise from the confusing uses of the term 'distractible' and the various forms of experimental procedure.

Brown (1964 and 1965) used a behavioural definition of distractibility, namely the decrement in task performance under experimental extraneous stimulation, compared with performance without such stimulation. In these experiments the effects of visual and auditory extraneous stimulation on tasks in the same modality were investigated. The stimulation did not always result in a decrement in performance, and some subjects improved their scores under intense extraneous stimulation. There appeared to be no difference in distractibility between groups of brain damaged subjects and subjects showing no neurological signs of organic damage. On the other hand subjects institutionalized early in life were more distractible than subjects institutionalized later in life. The author also indicated that other variables such as familiarity with extraneous stimulation affected learning and performance. For example, the effect of auditory extraneous stimulation in a word naming task diminished rapidly, and after seven trials there was little difference between performance under high and low extraneous stimulation. However, subjects of relatively high intelligence tended to adapt to the stimulation rather more rapidly than the less intelligent (Brown, 1965).

The research referred to above consisted of laboratory experiments and the extraneous stimulation encountered by the subjects differed in a number of ways from that found in typical classrooms and training environments. For example, in most classrooms the subjects experience both visual and auditory stimulation. Some of the stimulation is social, in that it involves interaction between a number of different individuals; some is meaningful, though much is meaningless; some is continuous and other discontinuous. The aim of the present experiment was to examine the overall effect of complex extraneous stimulation on the performance of

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severely subnormal children in the classroom, to observe whether the results from laboratory experiments (e.g. the quick adaptation to extraneous stimulation found in the majority of subjects of subnormal intelligence) are consistent with behaviour in classroom conditions, and finally to observe whether removal to conditions of low extraneous stimulation aids learning and performance. The results from such an experiment may help to clarify the degree to which laboratory findings can be applied to the classroom or training environment. The link between laboratory research and classroom practice is often not submitted to experimental investigation. The present study is an attempt to do this.

In training situations, extraneous stimulation may not only cause distraction but may also submerge auditory stimuli within a task. For this reason in assessing distraction effects in a classroom it was decided to make use of a visual task which contained minimal verbal instruction. In teaching and training situations both learning and performance are important, and in order to investigate the effects of extraneous stimulation on both these parameters it was decided to design an experiment which could be carried out over several days. Furthermore the experimental task consisted of a wide range of items, of which some were easy and others more difficult and required learning. Such an experiment would seem particularly important in view of the variations in subjects' performance referred to above, and the lack of experimental data on distractibility over long periods of time. There are, of course, other aspects of training which are equally important, for example, the phenomena of transfer and retention. Although it was not possible to measure all these variables in one experiment, some attempt was made to incorporate a measure of transfer of training.

An experiment which would measure these different aspects of behaviour would necessarily be complex, but would perhaps be limited by its inability to identify any specific variable effects, and thus only measure the overall effect of a complicated interaction of variables.

SUBJECTS

The subjects, who were divided into two groups, consisted of twenty-eight children aged between 4 and 11 years attending a day training centre in Bristol. Details of age and I.Q. are given in Table 1. The children came from three classrooms and since only ten children could be seen over a fortnight the classes were dealt with separately, that is:

1st 2 weeks	Class 1	6-8 years,
2nd 2 weeks	Class 2	4-7 years,
3rd 2 weeks	Class 3	9-11 years.

It is possibly relevant to note that there was almost no communication between the children from the three classes over this period.

TABLE 1. AGE AND INTELLIGENCE (STANFORD-BINET FORM L) OF SUBJECTS

	N	Age		I.Q.	
		Mean	Range	Mean	Range
Group I	14	7.6	4-11	43	27-52
Group II	14	7.8	4-10	39	30-53

METHOD

The subjects were presented with two form boards consisting of fourteen and seven pieces. The boards were made of wood and painted black. The pieces to be inserted were in white (Fig. 1). Board II contained different geometric pieces from

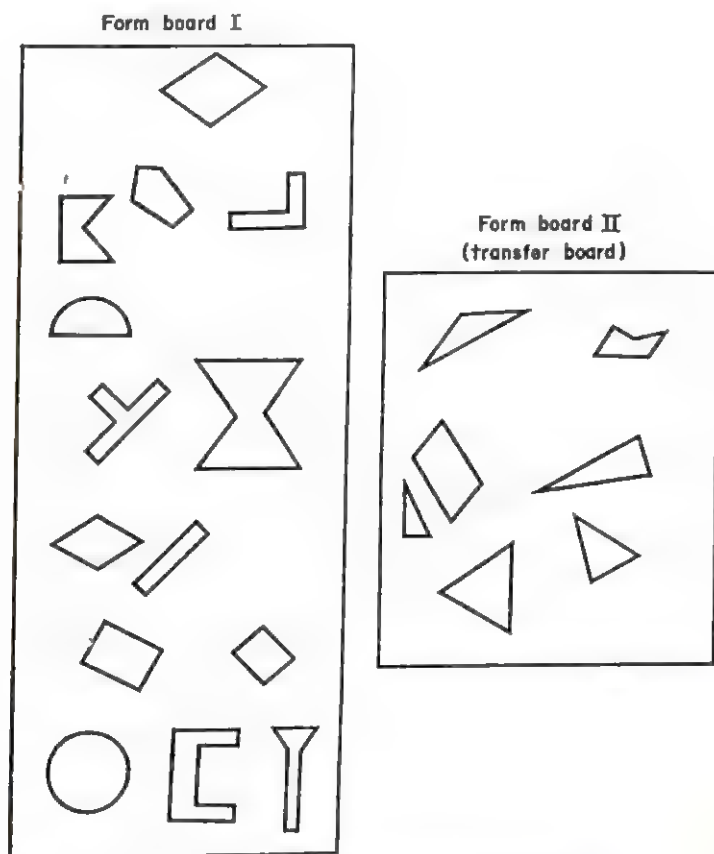


FIG. 1. Form boards used in experiment.

Board I, and was used to measure transfer effects. Each subject was seen ten times over a period of 12 days. The fourteen item board was presented on each occasion, while the smaller board was presented only on the first and eighth testing occasions. Both groups performed in their own classrooms on the first and eighth days; on the remaining occasions Group I continued in the classroom while Group II performed in a separate room where extraneous auditory and visual stimulation was minimal. On the final occasions (trials A and B) the groups were reversed in terms of testing environment. The plan can be seen in Table 2.

Subjects were seen one at a time. Each stood at a classroom table and was asked to "place the pieces in the holes" of the form board. If necessary the instruction was repeated, but once the subject had started no further comments were made, except in reply to their questions, and in these cases the experimenter either nodded or said "you do it".

When tested in the classroom the children faced their classmates and received

TABLE 2. BREAKDOWN OF TEN EXPERIMENTAL SESSIONS

	Trial I		Training trials		Retest trial	Trials A and B	
			2-5	6 & 7	8		
			Subjects seen in:				
Group I No. of S's present	Classroom	Classroom	Weekend	Classroom	Classroom	Experimental room	
	14	14		14	12	12	11
		Experi- mental room		Experi- mental room			
Group II No. of S's present	Classroom	Classroom			Classroom	Classroom	
	14	14		14	14	14	11
Subjects tested on:							
Boards I and II		Board I	Board I		Boards I and II	Board I	

similar extraneous stimulation in visual and auditory modalities to the other children, though physical contact was prevented. The research was discussed with teachers prior to the experiment, and they were asked to continue their usual regime during testing. Thus, apart from the subject undergoing testing, children continued with their classroom activities. Much of the classwork could be described as free activity, and most of the children were engaged in building, playing with sand and water, or beads, or playing one of a variety of games. Noise level varied but was always considerable (70-100 dB). Rooms were highly decorated with pictures and words, and a large number of toys lay around. Under experimental conditions subjects were seen in a room close to the classroom. Each subject stood at a table of size identical to that used in the classroom—that is, the working space available to each child was controlled. However, the children faced a wall. The room was empty except for a few chairs, and the walls were blank. Auditory stimulation was much less (52-56 dB), though there were occasionally more intense sounds caused by people passing the room.

The three classrooms, like the experimental room, faced on to the same playground, and, although different classrooms were used, the children occupied a similar position in each of them during testing. Furthermore, equal numbers of Group I and II subjects were selected from each class; thus there was control of inter-classroom effects.

In order to control for experimenter and motivational variables Group I was seen first on the first training day and second on the next. The groups were alternated in this fashion throughout the training period. Each subject was given two sweets at the end of each session.

The subjects were given 3 min to complete the first board and 2 min to complete the second. The number of pieces correctly placed was recorded, as was also the order of placement. The time taken to place all pieces was recorded, if this were less than the time allocated.

In order that variables such as knowledge of results, age and ability, and

experimental sophistication on the part of the experimenter, could be controlled, each of the classes was divided into equal numbers of experimental and control subjects. The original selection of ten children from each class was based on the exclusion of children who were deaf, blind, or likely to be on leave during the period of assessment. Despite this, a number of absences occurred, though an attempt to control the effects of this was made in the analysis of the data.

RESULTS

An examination of raw scores and difference scores for each subject indicates that the results are not normally distributed. There is evidence of a bimodal distribution in trial scores throughout the experiment. It also appears that as the experiment progressed some subjects reached the ceiling of the task, and as a result the data became negatively skewed. In view of this, and the impossibility of normalizing the data in a satisfactory manner, it was decided to make use of non-parametric statistics.

Form board I

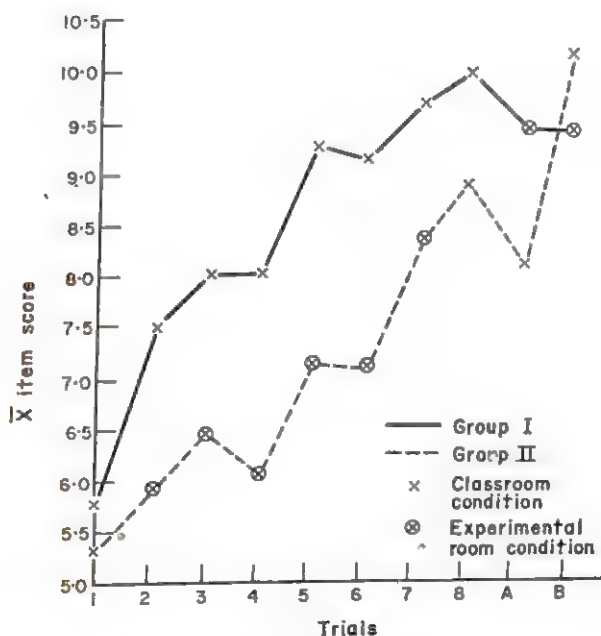


FIG. 2. Total task scores (i.e. number of items placed) Mean trial scores for Group I and Group II under classroom and experimental room conditions.

1 = Initial test trial } in classroom.
8 = Retest trial

A & B = Groups under reversed conditions.

Figure 2 indicates that although the two groups did not differ on trial 1 (Mann-Whitney $U = 92$: ns, n_1 & $n_2 = 14$) there was a tendency in subsequent trials for the group in the experimental room to improve less than the subjects in the classroom. However, the retest scores of the two groups which were obtained under classroom

conditions (trial 8) are not significantly different from each other ($U = 62.5$: ns, n_1 & $n_2 = 12$). Although there is no statistical difference between the groups in terms of improvement (trials 8-1), the subjects as a whole showed marked improvement, 23 out of 26 gaining higher scores on retest in the classroom (Sign Test $P < 0.001$). The results indicate that when the training conditions were reversed there was a tendency for the classroom subjects to lower their level of performance when changed to experimental room conditions. On the other hand the experimental subjects, when placed in the classroom, increased their level of performance. Indeed, a comparison between both groups for trials 6 + 7 (original conditions) minus trials A + B (reversed conditions) indicates that there was a significant difference on a two-tail test at approximately the 0.05 level. ($U = 23.5$, n_1 & $n_2 = 10$).^{*} This latter analysis is rather unsatisfactory, since some subjects dropped out of the final trials due to illness.

Records for the first 7 trials are complete and over this period it was possible to examine the variation in scores from one trial to the next for every subject. The results are shown in Table 3. It is apparent that the greatest increases and decreases occurred in subjects who performed in the experimental room ($\chi^2 4.012$ $P < 0.05$).

TABLE 3. CHANGES IN SCORES IN EACH SUBJECT FROM ONE TRIAL TO THE NEXT OVER THE FIRST 7 TRIALS. COMPARISON BETWEEN CLASSROOM AND EXPERIMENTAL GROUP

	Experimental group	Classroom group	Total
Rise or fall ≥ 2 points	32	20	52
Rise or fall of 1 or 0	52	64	116
Total	84	84	168

$$\chi^2 = 4.012. \quad P < 0.05.$$

Additional results were obtained by recording the order in which pieces were placed. The order of placement was recorded for every item in each trial. These scores were summed and averaged for every ten trials so that a mean placement score was obtained for each item for every subject. The results were then summed and ranked for each class group, and the correlations between the groups calculated. The results are given below.[†]

$$\begin{aligned} p_{12} &= +0.715 & t_{12} &= 3.54 & P &< 0.01 \\ p_{23} &= +0.520 & t_{12} &= 2.11 & P &\text{approaches } 0.05 \\ p_{13} &= +0.306 & t_{12} &= 1.11 & &\text{ns.} \end{aligned}$$

Throughout the experiment the experimenter wrote down comments regarding

^{*}In order to keep the two groups balanced for age and classroom which they attended, it was necessary, if a child was lost through illness from one class, to exclude another child from the same class who was attached to the comparison group. Within any one class the subject with the most similar initial trial score to the absent child was excluded.

[†]Subscripts 1, 2 and 3 represent 4-7, 6-8 and 9-11-year-old groups respectively.

the subjects' behaviour. For example, a record was kept of the occurrence of marked inattention to the experimental task. A comparison of incidence of noted disruption of attention during trials 2-7 for both groups (i.e. one under low environmental stimulation and the other under classroom conditions) showed that there was a tendency for the classroom group to show more disruption than the experimental group (incidence of inattention: classroom group = 41, experimental group = 28). However, the Mann-Whitney test indicated that the difference was not statistically significant ($U = 67$, n_1 & $n_2 = 14$).

TABLE 4. OBSERVED INCIDENCE OF ATTENTION DISRUPTION THROUGHOUT EXPERIMENT IN DIFFERENT AGE GROUPS

Group	Number in group	Attention disruption
4-7 years	8	49
6-8 years	10	48
9-11 years	10	29

Mann-Whitney tests were also used to assess difference in observed disruption of attention between the three age groups used in the experiment. The following results were obtained.* (See also Table 4.)

Age group	1 vs. 2	$n_1 = 8$ $n_2 = 10$	$U = 31$ ns
Age group	2 vs. 3	n_1 & $n_2 = 10$	$U = 32$ ns
Age group	1 vs. 3	$n_1 = 8$ $n_2 = 10$	$U = 7.5$, $P < 0.02$ 2 tail test.

The relationship between original scores and absence or presence of observed inattention on the first test occasion was also investigated. (Table 5.)

TABLE 5. INCIDENCE OF INATTENTION ON TRIAL 1

		Inattention		
		Observed	Not observed	
Scores on 1st trial (i.e. above or below mean score)	> 5.5	5	7	12
	< 5.5	14	2	16
		19	9	28

Fisher's exact probability test. (1 tail) $P = 0.012$.

Form board II

Test and retest scores obtained on form board II ("Transfer Board") indicate that subjects tended to obtain higher scores on the retest occasion (Sign Test + 11 - 4, $P = 0.059$ One tail test). Two factors were probably responsible for the change in performance level: (a) learning, and (b) transfer effects from Board I. Both groups of subjects would be expected to benefit equally from the first presentation of

* Subscripts 1, 2 and 3 represent 4-7, 6-8 and 9-11-year-old groups respectively.

form board II, and any difference between groups in terms of degree of improvement could be explained by transfer effects. It is of interest that the mean difference scores for each groups on Board II were almost identical (Classroom training, $\bar{X} (8-1) = 0.61$; experimental room, $\bar{X} (8-1) = 0.70$) and thus there would not seem to be any measurable difference in transfer effect under the two conditions.

DISCUSSION

It is apparent that subjects of low intelligence, most of whom would be regarded as brain damaged, did not appear to be more distracted by intense visual and auditory extraneous stimulation in a social situation, as measured by their performance on a visual task, than a group of similar subjects working under conditions of less intense extraneous stimulation. Indeed, there is some evidence from the statistical analysis, and graphical data, to suggest that removal to an environment with less extraneous stimulation caused a decrement in performance. Furthermore there was greater variability in scores from one trial to another in subjects working in the experimental room. The differences between the two groups are possibly under-estimated, since on Trial 5 half the classroom subjects had obtained "maximum possible" scores on the test, compared with three subjects working in the experimental room. Nevertheless it is also relevant that subjects from both groups significantly improved their performance during the experiment.

The results can be interpreted in a number of ways. Firstly, although the decibel level was considerably lower in the experimental room, there were occasional noises. It has been indicated before that intermittent noise may have more distracting potential than continuous noise (Pollack and Bartlett, 1932). Indeed, the latter condition, which is often found in training centre classrooms, may be of advantage in that it supplies a background noise which obliterates the effect of sudden unfamiliar sounds.

A further interpretation concerns the nature of extraneous stimuli in the two environments. In the classroom environment the auditory and visual extraneous stimulation, both physical and social, although of greater intensity and complexity than that found in the experimental environment, was familiar. In the experimental room the extraneous stimulation was unfamiliar. Thus subjects who were removed from the classroom were deprived of the security of a familiar social setting. It was observed in the early trials that several of the subjects in the experimental environment did not respond continually to the task material, but often gazed around the room, stared at the experimenter, or stood very still holding one of the task pieces in the hand. Schaffer (1958), in describing his hospitalized children, referred to part of their behaviour as "global gazing". His children were much younger, and lower in terms of mental age. The behaviour was also reminiscent of "freezing" in young animals in unfamiliar or fear-provoking surroundings (Clarke *et al.*, 1951).

It is probably relevant that observations of inattention were recorded very frequently in the youngest age group, and that concentration often appeared disturbed in the last half of the 3-min period rather than the first part. It should be stressed, however, that periods of active concentration for periods of 1 or 2-min on one item were not uncommon. These findings must be accepted with caution, for

statements regarding distractibility, even based upon close observation, may well be suspect.

TABLE 6. INCIDENCE OF GAZING BEHAVIOUR IN TRIALS 2-7

Age group	Classroom	Experimental room
4-7 years	2	11
6-8 years	5	2
9-11 years	0	5

The 'gazing' behaviour recorded above probably deserves further comment. On the first trial it was noted in both groups (three subjects who were to remain in the classroom and two who were to go to the low stimulus room). On the second trial only one subject who was in the classroom showed this behaviour, while five of the subjects who had been removed to the experimental room exhibited 'gazing' behaviour. The total incidence of this behaviour for trials 2-7, when all subjects were present, is shown in Table 6. It is apparent that the incidence was twice as great in the low stimulus room compared with the classroom. The following are typical of the comments made on such subjects.

"In three minutes has only touched four pieces. Looks at *E* a lot of the time."

"Looks at *E* after first placement. Doesn't touch any other pieces."

"Just looks at *E*. Has touched five pieces in two minutes. Nothing touched in last minute."

"Stays very quiet and looks at *E*—eventually smiles."

However, similar behaviour, though less frequent, was noted in the control group, for example:

"Picks up two pieces in the first two minutes—makes placement in the third."

When the groups were reversed, the 'gazing' behaviour was again observed in the experimental room in three of the subjects, though in the classroom situation only one subject had shown it. On the other hand, one of the subjects who was trained in the experimental room, when placed in the classroom, became hyperactive to the point of throwing the pieces around the room.

It is perhaps relevant that the 'gazing' behaviour was particularly noticeable in the youngest group of subjects, and out of a total of eight subjects in age group one, who at one time or other were in the low stimulus room, five showed 'gazing' behaviour. It seems possible that new environments may reduce overt behaviour to gazing in very young subjects. They may, thus, appear less active than in their usual environment, but as has been seen, this is not necessarily an advantage and may represent an extremely handicapping, though less dramatic, form of disturbance.

It is worth noting that a number of subjects taking part in this experiment had previously been described as highly distractible. Indeed, because of distractibility, it was stated that cognitive assessment was difficult or impossible. Several of these children, though showing observable inattention for periods during the experiment, did not completely break down in performance. It is perhaps relevant that the task was wholly or partly within the subjects' ability range, and was carried out for a

brief period each day, and performance was rewarded. In cases of assessment and examination, children are generally taken to unfamiliar environments, often by people they do not know. It appears that certain forms of distraction are more likely to set in under such circumstances. Indeed, although test manuals on cognitive assessment sometimes advise the use of quiet non-stimulating environments, such conditions may not be ideal for the assessment of mentally handicapped children, particularly when the psychologist is required to assess the abilities and disabilities of a child rather than "obtain an I.Q.". The present results are far from conclusive, but the observations made during the experiment suggest that this is a problem which needs to be examined with more care.

SUMMARY

The present experiment was carried out to assess the applicability of previous experimental results to training situations. It would not appear to provide any concrete evidence for or against the use of environments low in extraneous stimulation, but rather suggests that low stimulus conditions, when unfamiliar or lacking in familiar social stimulation, may produce harmful effects on performance. Indeed, the essential result of the present experiment is to show that much more careful experimental investigation is required before embarking on the wholesale structuring of training environments for specialized groups of children.

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THE PROVISION OF PRIMARY EXPERIENCE IN A THERAPEUTIC SCHOOL

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INTRODUCTION

THIS PAPER describes the work of the Mulberry Bush School, an independent school for maladjusted children. We have found that we could help more of the children whom we have selected for treatment, to become more normal and socially acceptable than we thought possible on referral.

It has, therefore, seemed worthwhile to make some attempt to formulate the methods which we evolved, at first intuitively, later on the basis of growing theoretical insight, for achieving these results. Such methods are hard to describe precisely, and we have found it useful to borrow some terms from certain psychoanalysts, particularly Winnicott (1958).

Much of the experience which we have had during the past fifteen years we do not fully understand; the ideas formulated in this paper are tentative, but we have found them helpful to our practice: it remains to be seen how useful this approach will prove to be eventually, and whether it can be employed in residential treatment elsewhere.

We have termed our approach the provision of primary experience, and have seen this as needed by a relatively small group of deeply disturbed children; most of those whom we select for treatment seem to belong to this particular group. Consideration is therefore given in this paper to their special needs, and the means which we are using to meet them.

This paper refers to work done in the Mulberry Bush School from 1948 up to and including 1962. Considerable reorganization has taken place here during 1963-64: it therefore seems best in this context to describe the set-up of the school as it was in 1962, the year during which this paper was written.

DESCRIPTION OF THE SCHOOL (1962)

The school is a non-profit making limited company, run by a Board of Directors and fully recognized by the Ministry of Education. There were at that time forty children and twenty-three adults. The children were boys and girls of average intelligence, the age range being 5-12 years. The aim of treatment was to return them to normal life as soon as possible or, in the case of deprived children, to a children's home, a foster home, or whatever seemed suitable. (The average length of stay was 2 years.)

There were four lesson groups ranging from the "smalls"—a group which had little structure but provided early educational experience—to the "bigs" where there

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was a very definite structure, formal education, and from which children usually returned to more normal school life; these were the planned groups. There were also, of course, the spontaneous groups, which evolved during what Bettelheim (1950) calls "In-between times"—before and after meals, during school play times, in the evenings and at weekends. Because of the way in which treatment was carried out, a deep bond was usually established between lesson group and teacher; it was then possible for this bond to come into all fields of the children's lives in the school. The team worked closely together with a great deal of mutual support, and there was also steady support from outside, from our directors and from referring child guidance clinics. Psychiatrists supervised treatment of the children they sent to us, while psychiatric social workers helped the parents, and ourselves in our work with parents, who usually visited their children frequently.

My husband and I were co-principals. He established and gave support to the therapeutic environment, planning administration in a way that left me free to supervise and carry out therapeutic work within the school, and to maintain close liaison with parents and referring clinics. (Had it not been for his support none of us could have tolerated the strain of the particular work we did. The need for a very special kind of paternal support was essential.)

There was a head teacher and three other teachers; a domestic bursar, a matron and a deputy matron. This was the treatment team. There was, as well, the cook-housekeeper, the school secretary, and a large domestic staff, all of whom were in touch with both team and children.

PRIMARY EXPERIENCE

Winnicott (1958) and others (Little, 1960); Drysdale, 1958) have postulated a primary state of unity of the mother and her baby. In thinking about emotional deprivation I find it necessary to take as a starting point this state of unity, at the very beginning of a baby's life. Freud (1949) wrote: "For just as the mother originally satisfied all the needs of the foetus through her own body, so now, after its birth she continues to do so, though partly through other means. There is much more continuity between intra-uterine life and earliest infancy than the impressive caesura of the act of birth allows us to believe" (p. 109).

In the course of normal development the separating out of mother and baby is a long and gradual process, at the completion of which the baby exists for the first time as a separate being, an integrated individual, absolutely dependent on the mother, but no longer emotionally part of her. For integration of the personality to take place—usually by the end of the first year of life—the evolution of this process must not be interrupted. Interruption of this essential process which mothers and babies work through together in their own time and their own way is, in my view, the trauma which lies at the root of the various types of cases of emotional deprivation referred to us (Dockar-Drysdale, 1958).

The point at which traumatic interruption has taken place determines the nature of the survival mechanisms used by the child: the primitive nature of these mechanisms does not prevent them from being used in a highly complex way. Winnicott (1963) has said: "All the rest of mental illness (other than psycho-neurosis) belongs to the build-up of the personality in earliest childhood and in infancy, along with the

environmental provision that fails or succeeds in its function of facilitating the maturational processes of the individual. In other words, mental illness that is not psycho-neurosis has importance for the social worker because it concerns not so much the individual's organized defences as the individual's failure to attain the ego-strength or the personality integration that enables defences to form" (p. 53).

The emotionally deprived child is pre-neurotic, unable to experience guilt or anxiety, functioning at various primitive stages of development. For a neurotic child there may have been inadequate continuity between the intra-uterine and post-natal phases, but nevertheless he has enough protective and protected environment to make it possible for him to build a separate personality structure, capable of integrating good and bad experiences, and his responses to them, rather than being helplessly buffeted by them. He is thus able, because of "good enough infant care" (Winnicott, 1958) having achieved integration, to embark on the long voyage of secondary experience. This is not so in respect of the children under consideration here.

The children we selected for treatment fall into several categories, depending on the stage at which interruption of primary experience took place.

"Frozen" children

The most primitive of these categories, i.e. the least integrated, is made up of those whom I have described elsewhere as the "Frozen Ones" (Dockar-Drysdale, 1958), who have suffered interruption of primary experience at the point where they, and their mothers, would be commencing the separating-out process (having been, as it were, broken off rather than separated-out from their mothers). They have survived by perpetuating a pseudo-symbiotic state, without boundaries to personality, merged with their environment, and unable to make any real object relationship or to feel the need for such a relationship.

Such a child must be provided with the actual emotional experiences of progression to separating-out, thereby establishing identity, accepting boundaries, and finally reaching a state of dependence on the therapist. Such a child cannot symbolize what he has neither experienced nor realized. (A "frozen" child, on referral, will steal food from the larder because he wants food at that moment and for no other reason. The same child in the course of recovery may steal again from the larder, because his therapist is absent; this stealing will now be symbolic.)

Archipelago children

The next category consists of those who have achieved the first steps towards integration, so that one could describe them as made up of ego-islets, which have never fused into a continent (a total person). For this reason we call them "archipelago" children. These children give the impression of being quite mad whenever they are not being quite sane. They are either wildly aggressive, destructive and out of touch, in states of panic-rage or terror, or they are gentle, dependent and concerned. They present a bewildering picture till one comes to know them and to understand the meaning of their behaviour. They too need to progress through the process of integration.

However, these stormy children are not so difficult to help as are "frozen" children, because the presence of ego-islets amid the chaos of unassimilated experience

makes life more difficult for them. They are, from time to time, very unhappy and aware that they need help. The fact that some primary experiences have been contained and realized, results in a limited capacity for symbolization, which facilitates communication of a symbolic kind not available to "frozen ones". Where "frozen" and "archipelago" children are concerned, treatment must involve the breakdown of pathological defences, containment of the total child, and the achievement of dependence on the therapist as a separate person. These two groups, where integration has not been sufficient to establish a position from which to regress, are very different from those in the next category.

False selves

Classifying the "false-self" organizations Winnicott (1960) writes: "At one extreme: the false-self sets up as real and it is this that observers tend to think is the real person. In living relationships, work relationships, and friendships, however, the false-self begins to fail. In situations in which what is expected is a whole person the false-self has some essential lacking. At this extreme the true-self is hidden" (pp. 142-143).

Having described other types of false-selves advancing towards health, he writes: "Still further towards health: the false-self is built on identifications (as for example that of the patient mentioned whose childhood environment and whose actual nannie gave much colour to the false-self organisation)" (pp. 142-143).

The latter organization he has described as the "caretaker-self" (Winnicott, 1960). This elaborate defence takes various forms, and is often difficult to recognize—especially because the "little self" part of the child is carefully concealed by the caretaker. (For example there may be a delinquent "caretaker" which steals without conflict, on behalf of the "little-self".)

The first two groups, i.e. the "frozen ones" and the "archipelago" children, do not adapt to demands in the way characteristic of false-selves and caretaker-selves. This is one of the reasons why they prove unmanageable in most residential settings (there is no real little-self to be protected), but there is an embryonic ego, capable of involvement in a containing environment.

Both "false-self" and "caretaker-self" groups need to regress to the point where development came to a standstill, often reaching a state of psychic fusion with the therapist, from which they can advance once more to a more adequate integration as whole people.

I think of all these children as pre-neurotic (only integrated people can contain personal guilt and anxiety). They employ a variety of survival techniques, such as I have already described, which one may perhaps distinguish from defence mechanisms because of their primitive nature. One factor seems common to all—the experience of interruption of an essential illusion (Winnicott 1958), namely the mother-baby unity of the immediate post-natal period, due to premature failure by their mothers, or mother-substitutes, in adapting to their needs during the first year of life. Through such a failure of the containing environment, they have therefore been driven to shoulder the load of their separateness before independence could be achieved. The point at which this disaster has befallen them will determine the means of survival at their disposal.

Such failure can come in many ways: for example, one mother may be unable to remain preoccupied with her baby for sufficiently long; another may be able to have an initial fused experience with her baby, but can only separate-out by withdrawing concern. There may be actual separation of mother and baby, as described by many authors; or again the father, who would have been the normal protector of the vulnerable unit, may have died or departed.

HANDLING OF THE CHILD

My thesis is that all these groups of children require the provision of primary experience which has, so far, been missing from their lives. There is no question of ego support at such a stage of treatment. The therapist, like the mother of an infant, must provide the total ego of organization until such time as integration makes it possible for the child to establish his own ego.

The mother normally shares with the newborn baby an illusion that they are part of each other; this fragile illusion is protected by a "barrier against stimuli" (Freud, 1922, p. 33) provided by the father and other helpful members of the household. What is real in this earliest phase is the perfect or near-perfect adaptation which the normal mother makes to her baby's needs. Disillusionment follows in the natural course of things through gradual failure in adaptation, and consequent realization of separateness by both mother and child. All these children I have described have been exposed to some failure of this illusion at the outset of life, and therefore need to experience it belatedly before they can develop further.

Our task then is to provide such illusionary experience, by which I mean something felt in a here-and-now context, which enables the child to make use of symbols in such a way that he can fill in the gaps which have, up till now, made continuity of experience impossible. We must provide this in a way which will feel real to ourselves and the children in our care, and we can achieve this only by making perfect, although of necessity localized, adaptations to their individual needs. [Perhaps this is akin to what Sechenaye (1951) describes as giving the psychotic child "symbolic realization".]

The essential is that one should be there to meet the child's indications of possible areas of adaptation, much as Winnicott (1960) describes the mother meeting the baby's spontaneous gesture. (It would be no use at all for us to think out and decide on an appropriate adaptation for a particular child.)

One day, for example, I was walking down the street with Marguerite, who was at that time 10-years-old, and had come to us with an elaborate caretaker-self organization, made necessary by early and traumatic separation from a very disturbed mother. Just at this moment she was emotionally exhausted, and in the deepest part of a localized regression, in which she was involved with me. I remember thinking, "If she were really a baby I'd pick her up and carry her home—as it is, what can I do?" As if in answer to my thoughts, Marguerite laid her hand in mine, in such a way that it was clear that in carrying her hand I would be carrying Marguerite herself. In this way she made it possible for me to provide the necessary experience.

It is essential in this kind of work that the therapist should support the child in such a way that the latter has a *complete experience*. This will not symbolize any previous experience, although it will itself be symbolized later (following realization). Such experience must be felt as real, and worked through by child and therapist, so that eventually the child is able to face and verbalize even the reality of his original

deprivation, and to know that nothing can be done about this in objective reality.

For such an achievement, the pain and disillusionment must have been endured by both the therapist and child, and the latter can only tolerate this in the context of a relationship based on complete experience. (The precise nature of such an experience depends on the individual emotional history and needs of each child.) I can illustrate incomplete experience in this sense by referring to that of an isolated child in a rage, who eventually falls asleep from sheer exhaustion: the corresponding complete experience is that of a child who is supported through such a range by his therapist, so that eventually he can be comforted and settled, and go to sleep at last, because he is ready to do so.

Perhaps one might say that in this sort of treatment "the complete experience" may have to take the place of "the correct interpretation". It is impossible to interpret, because there cannot be symbols of a missing experience. This can be seen clearly in the connection of panic fears, panic rages and panic despairs: the child needs help to go on to the end of the panic, so that the experience can be completed.

The essential characteristic of panics (so typical of such children) is incompleteness—in much the same way that a nightmare is incomplete, because the dreamer awakes from an unfinished dream. When the dreamer can complete the nightmare and awake, it will become a bad dream, and similarly when the panicker completes the rage, or terror, or despair, and survives, the panic becomes a bad experience which can be contained, tolerated, and stated.

Babies imaginatively create their own mothers in terms of their individual needs, as described by Winnicott (1958). In the same way pre-neurotic children imaginatively create their own therapists. Both babies, and the emotionally ill children I am describing here, follow such creation by annihilation, and then create once more. Only if this process can be tolerated again and again can the next stage be reached, when the objectively real baby can find the objectively real mother.

I remember how individual were the needs of our own four babies. My own experience with each of them was also quite different: they have evolved into four very different people—and I know that subjectively they had, as babies, four different mothers. (Maybe they were also four different babies to begin with as there is much evidence on temperamental differences at birth.)

Vanno Weston, one of the teachers at the Mulberry Bush, has a 9-year-old girl called Pat in her group, who recently expressed this very well; she said: "At the home where I was before I came here there were all of us children, and the grown-ups who looked after us; here there is my group and *all the Vanno Westons!*"

There is nothing traumatic for the therapist to endure in the process of being 'created' by the child: on the contrary, this is a happy experience, and obviously the risk of seduction and anti-therapeutic collusion is great in some cases. Very different is the process of 'annihilation', which is so primitively destructive that one cannot talk about anything as personal as hate in this connection, and which must be endured if treatment is to succeed. The child simply wipes out the therapist, and the therapist has to feel wiped out, rather than defend himself against the child. An interpretation in such a context becomes a defence, because it asserts the continued existence of the therapist.

A common form of such 'annihilation' is for the child to cut off all communication

with the therapist. Robert, in such circumstances, said to me: "I've had more than enough of you—I'm fed up with you", and did not come near me for a week. I did nothing about this, because I knew he had wiped me out. When he returned, he re-created his illusionary me in a slightly different form, and we continued to work together.

Annihilation cannot be planned, any more than creation—it must simply be endured as what it is felt to be in terms of the involvement. Presently the child will re-create the therapist once more, because now he is ready to do so, but there will be pain every time annihilation takes place, which may be frequently. Once some degree of differentiation has been achieved there will be the gradual appearance of ambivalence, and now there can be real personal hate in the relationship. None of this can be organized, but providing one is prepared to go through this sort of experience with the child, the phenomena I have described will turn up in good time.

THE THERAPIST AND PRIMARY EXPERIENCE

Much time and patience may be needed before a state of involvement can be reached. There are long periods when we must contain the child within the therapeutic environment of the school, waiting for the beginning of processes such as I have described. In the meantime we do our best to ensure that those areas of personality which are functioning continue to do so. For example, the occasional child who has no learning problems should not lose ground educationally, although he may be a case of school phobia. He continues his education either through special teaching in a group or, if necessary, through individual tutorials. Marguerite, mentioned above, was able to keep her regression with me localized in this way, continuing her everyday life fairly normally, and her education was seldom interrupted.

It will be remembered that caretaker-selves and false-selves need to regress before they can progress healthily, but that "frozen" and "archipelago" children must progress from the start. The first two groups have reached a point from which to regress, the second group must advance to integration, because they have remained either unintegrated or only partially integrated. The progression of an unintegrated child presents greater problems of management, because he does not feel in any way inadequate. He lives entirely in the present, there is no past to make him guilt-conscious, and no future to create anxiety. In the course of progressing to integration such a child finds himself unable to function in any field; having abandoned his delinquent survival techniques he feels utterly helpless, and goes through a phase of anaclitic dependence during which he needs very special care.

John, aged 10 years, a "frozen" child who had reached this state, was dependent on Mildred Levius. He found her absence intolerable and talked about this to me, complaining of his feeling of emptiness. At this point it was possible for Mildred to establish adaptations as indicated by John; one of these was a reliable supply of sugar lumps, another was a special sort of reading tutorial combined with tea in the staff house. John was able to count on this steady provision, and to replace desperate demands with hopeful expectations.

Lynn, aged 7 years, who seemed to have a caretaker-self, a child at present in Mildred Levius's group, has needed for some time a little walk after her lesson group. During this walk, at intervals, she needed Mildred to hold her upside down—virtually on her head. Now at a slightly later stage she

needs to be brought the whole way round, so that the experience is completed with Lynn on her feet again.

Robert, aged 11 years, a child with caretaker-self, acquired the nickname of "Bedstead", and in my talks with him he gradually allowed me to meet his little self, which I suggested could be called "Cotstead". The caretaker part of Robert, the Bedstead part, was severe and harsh; during one of our talks he was able to explain to me that his ears and hands belonged to little Cotstead—that Bedstead had no ears or hands. However much we all tried to help Robert, he was unable to have the regression he needed so much, until finally in Mildred's group Bedstead handed over the care of Cotstead to her. Robert managed this by building in his lesson group a model which he called 'his fourposter bed'. (This was also Mildred.) His hand could be tucked up in the fourposter, and Mildred could look after him. The savage Bedstead caretaker has now almost disappeared, and Mildred is taking care of a very small Cotstead, who may at last be able to learn (i.e. be fed).

I have spoken of four groups: the "frozen" ones, the "archipelago" children, the caretaker-selves and the false-selves. I now wish to discuss these groups and the various living-in treatment approaches they need, in more detail.

Provision for "frozen" children

For a "frozen" child, who has not integrated, the most important experience to be provided will be the achievement of separateness, the establishment of boundaries to his personality. This is a slow and gradual emotional experience in normal development, just as weaning needs to be slow and gradual, whereas in the case of a "frozen" child separating-out has been sudden and traumatic. He will have survived by preserving the illusion of unintegration, using merging instead of dependent leaning (Dockar-Drysdale, 1958).

Because such children have never arrived at the point of disillusionment and acceptance of separateness as individuals, they are perpetually struggling to remain fused with their environment, which, because they have not achieved integration, seems to them to be a normal state of being.

Interruption of mergers with adults or children produces suicidal panic. I have written at some length about "frozen" children elsewhere (Dockar-Drysdale, 1958); here I only want to stress that we have to replace the illusion of being merged with someone else by the experience of finding, as it were, the boundaries of the self.

Recently, Peter, a charming violent little boy of 6-years-old, sought for 2-hr to draw me into his sort of panic rage, as a form of merger. I sat, holding on to his hand, while he whirled about on his bed, biting, kicking and clawing me, shrieking obscenities: behaviour which gradually gave way to isolated statements.

"I know I'll be dead by the end of this . . ."

"Soon you'll be in a rage too . . ."

"I know you'll be so scared you'll leave me in the middle, and I'll kill myself . . ."

I suggested that what he did not know was that he really existed, had really been born, and that I also existed, and had also been born, and because of this we were real people; that I was not going to leave him to destroy himself, that it was safe to attack me and that I would not allow him to destroy me either, that I valued him, and that I would stay until he was through his terrible ordeal and out on the other side. (These comments I made sometimes in lulls, sometimes at the top of the storm, when I had to shout to be heard.) Peter asked suddenly, "Like the other bank of the Thames?" And I agreed that it was just like this.

We spoke about the Thames again a few minutes later, and I said that I thought that up to date he had been swept along by the current, downstream towards the sea, but that I was asking him to swim across the current: that I knew how hard this was, and what a struggle he was going through,

but only by doing this was he going to find the other bank for himself, and prove to himself that it really existed.

I would suppose that in classical analysis this would be regarded as reassurance made for the analyst's own benefit, but here was a statement of a primary experience which I made to the child because it needed to be verbalized.

At the end of 2-hr of ebb and flow and panic rage Peter was suddenly able to tell me—by now gasping for breath—that he was all right . . . would I wrap him up and feed him? He said: "I am so thirsty". I wrapped him in a blanket, in which he curled up exhausted but relaxed, and I brought him a whole jug of warm milk, of which he drank every drop. I think at this moment he established his body ego. Two months later he achieved dependence and a depressed mood.

Provision for "archipelago" children

Provision of primary experience for what we call an "archipelago" child is somewhat different, even though he must also progress to integration.

As I have already said, there are ego-islets, which in normal development would gradually fuse into an established ego. In the case of an "archipelago" child the break in development has taken place at the point where the baby was in the process of separating-out, but where only some localized integration had taken place. The resulting "archipelago" stage can give the appearance of dis-integration but, in fact, is an early stage of integration and needs very special provision.

When we first knew Anthony he was on the one hand the gentlest and kindest child, and on the other the most savage and destructive that I have ever met—the swing was from one moment to the next. Anthony's father had left home for ever when the mother-child unity still needed total support. Anthony said to me later in treatment: "Poochie (our little dog who had puppies at the time) is fed and looked after, so that she can look after her puppies. It would be awful if she had to leave them to go and get food for them—there needs to be someone to look after her *and* her puppies."

Where Anthony was concerned the whole team had to work together, each person making contact with whatever bit of Anthony could be reached at that moment, in that context, by that person. My husband spent 6-hr sitting on the end of Anthony's bed one night because the child had asked: "Will you stay till I go to sleep?" and he had answered "Yes".

Faith King took him to see the swan family on the Windrush, and their talks together about the swans helped him to understand his own and his mother's problems. Vanno Weston gave him a purple sweet each morning. Joe Weston brought him an orange in bed each night. I had sessions with him 'on demand' which usually meant two or three times a week, when Anthony communicated with me in terms of a saga concerning a little mole lost in a labyrinth.

Between such episodes there was no continuity—Anthony flying round the school attacking other children like a whirlwind, throwing furniture about, smashing windows and screaming abuse at us—quite out of touch with reality. However, the ego-islets began to grow, a nucleus of ego was formed, the areas of havoc became gradually more limited, until now, within a year of his referral to us, Anthony has become a more or less integrated person.

I must add one more note about Anthony in connection with the purple sweet. Each child in his group had a special sweet each morning from Vanno Weston—whom her group called Vanno Sunshine because of her warm smile. Anthony's sweet, as I have already mentioned, is always a purple one. Richard, another child in the group, said one morning: "I want a purple sweet!" Other members of the group said at once: "Well, you can't have it because Anthony always has the purple one". Richard sighed and settled for a pink sweet. Anthony was standing in the window through which the sunlight was pouring, holding up his purple sweet against the light. He had, however, noticed what had happened, and called to Richard, saying: "Come and hold up your sweet and let the light come through it like I'm doing!" And when Richard did so Anthony said to him: "All the sweets look the same when sunshine comes through them".

This piece of communication not only showed us Anthony's use of symbolism, but also his newly-found capacity for empathy.

Provision for false-self children

James, who came to us with an adapting façade of good manners, obedience and charm, behind which was tumult and confusion, had been through a period of regression with Faith King and was at the start of synthesis. One morning he asked Faith for a piece of buttered toast at the end of staff breakfast. Faith provided this at once, recognizing an appropriate form of adaptation which could be maintained without too much difficulty. James, in fact, continued to need his piece of buttered toast from his therapist for about eighteen months. Only Faith herself could make this; reliability of provision was essential, this continuity having been absent in his babyhood. By the end of the eighteen months he no longer needed the adaptation.

It is interesting to consider exactly what determines the child's choice of adaptation: for the most part tactile, holding, and oral experiences are those most frequently looked for (as one would expect).

James, at the end of 3 years, has just reached some degree of integration, which is still fragile.

Provision for caretaker child

Marguerite, describing her babyhood experience, said: "... the wind blew, the bough broke, the cradle fell . . . Why did the mother leave the baby in a cradle on a weak branch? Why didn't she notice the wind rising?" Indeed, she felt that it was only she herself who had taken care of this baby.

She was the first child with whom I attempted a localized regression within the Mulberry Bush. (I had brought children through total regressions, in my private work, under very favourable conditions.) The journey down to the bottom of the regression, where the caretaker handed over to me and I was allowed to look after the very small baby, and the synthesis which followed, took about a year to achieve. My provision for her needs consisted in giving her a short session each day, in the course of which she slowly introduced me into her inner world. She described to me in detail a country shrimp (the little self) lived with the Shaking-hand-fish (me at the Bush), and the Holding-hand-fish (myself alone with Marguerite), in a shell house built by the fishes and Jane Hook.

I had to gain the confidence of the caretaker part of Marguerite, so that I was allowed to help to take care of the little self. At the bottom of the sea, the holding-hand-fish and the shaking-hand-fish helped to take care of the shrimp, until the caretaker part of Marguerite was able to hand over to me altogether, and the newly integrated Marguerite became wholly dependent upon me for a time.

At the bottom of the sea Marguerite told me about this in terms of Jane Hook leaving the shell house, and allowing the fishes to take over the shrimp. I find this sort of communication provides me with the means of making adaptation in a reliable sort of way. I have to be very careful not to be tempted into making interpretations which would be irrelevant or even damaging, because premature. As a fish I could say all sorts of things to the shrimp, which as a person I could not yet say usefully to Marguerite, who was all the time realizing and symbolizing her experience in her own way.

I used no interpretation in the ordinary sense at this stage, but really lived through this experience with her. Much later, when the shrimp had become completely dependent on the holding-hand-fish, Marguerite used to trot behind me wherever I went in the Bush holding my hand, which I had to leave ready behind my back for her to take while doing all sorts of other things around the school. I also bathed her on Sunday evenings (when I always worked at the Bush in some sort of practical way). When she was on holiday I sent her bath cubes, and she was free to telephone me.

I was able to gain her very disturbed mother's co-operation, without which treatment could not have been successful.

During the regression there was a disaster when I was away for a few days, and the shrimp shrank to a dot. There was another disaster when it fell into its bowl of porridge head first, and no help could be obtained because the fishes had *not* installed a telephone.

Annihilation came into the picture: Marguerite in the Bush cut off all communication with me, and the shrimp announced that the fishes had gone for ever from the shell house and could never return. Of course from Marguerite's point of view she could really annihilate the fishes—one of the

advantages of being prepared to work at the bottom of the sea! Later she recreated myself and the fishes with slight variations.

Eventually came the next great step, when Marguerite told me that the shrimp had grown too big for the shell house and the fishes and the porridge, and was leaving the bottom of the sea. The fishes helped to launch the shrimp, and Marguerite left the Bush to go to a boarding school for less disturbed children. Arrangements were made by the analyst supervising her treatment for Marguerite to visit me in holiday times, and I also see her from time to time at the school.

On her last visit to the Bush, Marguerite told me that the shrimp had just broken an antique jug which it had owned for years. I said that I felt the jug had served its turn, and could now be safely broken because it was no longer necessary. Later in the session Marguerite suddenly said: "Why don't I feel you are special any more? Why, you are just Mrs. D.!" Disillusionment was complete, and I pointed out that now she was really Marguerite I could be really Mrs. D. She replied with a little sigh: "We will still know each other, but it will be different. . . . I suppose we will be friends!"

PROBLEMS FACED BY THE PROVIDERS

I want to say a little in conclusion about some of the difficulties faced by the treatment team—the providers.

When an adult becomes deeply involved with a child, both of them are naturally highly sensitive to the impingement of others on their relationship. We have evolved a plan for this stage of treatment which we call "trio-therapy", in which the adult-child involvement is supported by a third person, whom we call "the catalyst". The function of this third person is something like that of the father in supporting the mother-baby unity.

The provision of such support has proved an emotional economy, and has enabled treatment to proceed much more rapidly than has hitherto been possible. From the child's point of view, for example, when his own therapist is away, the catalyst will help him to tolerate this separation, and to understand his own rage and misery in this situation.

The therapist, on the other hand, taking much-needed time off, is liable to feel rather the same as the mother who has at times to leave her baby in the care of someone else. This 'mother-substitute' must be known and trusted by the mother; just so, the catalyst must be known and trusted by the therapist.

It will be realized that the therapist providing primary experience in a residential unit faces rather special difficulties. It is clear that any one worker can only go through this total process with a limited number of children. (In ten years, I myself have helped twenty "frozen" children to integrate.) It is not possible to have more than two or three children going through the first phase of treatment at the same time.

The child will come to know the worker as he or she really is, rather than what the therapist hopes to be. Such insight can be very painful, and is unavoidable in a context in which the child will be aware of so much—not only of the loved grown-up at his best, but also at his exhausted worst! Also, the therapist making such provision must face the fact that what can be provided is not only illusory but also inadequate—because the experience has to be localized, and because the relationship will inevitably be disturbed by the behaviour of other people.

Above all there is the fact that the therapist, however devoted, is not the child's own mother. The therapist will also be having an illusory experience, and, in an involvement with a child, such experience, so like that of a mother with a baby, can seem very real. It is true that the therapist will have insight and the support of

the catalyst, but there is no "barrier against stimuli" such as that supplied by the protection of the father and the home. On the other hand, the therapist will not be hampered by the load of guilt and anxiety felt by the mother of a disturbed child.

The particular emotional problems faced by the therapist who is thus involved with a child, however, are presumably to some extent those which would turn up if he, or she, were actually a parent. For instance, the integrated child may not grow up, as the therapist would hope, into a normal person making satisfactory identifications. The therapist's adaptations cannot be ideal, there will be limits to her capacity for involvement. For the child there are the early years of emotional deprivation and traumatic experience, and there will be many external factors likely to intrude into a treatment setting which makes use of the total environment. This is a difficult and painful realization, because of the amount of love and care which the therapist has given to the child.

The catalyst-supporter plays an important role in helping the therapist to tolerate such painful insights, being even prepared when necessary to impinge into the involvement, where "separating-out" is unduly prolonged and there is a danger of involvement turning into collusion. (Just as the father in a family would impinge into the mother-baby unity should he feel that this is becoming too much of a good thing.) On the other hand the catalyst will be in a position to support the therapist; for example, in assuring him that the current failure in adaptation is not in fact a final catastrophe for the child, that failing is not "letting down".

Usually it is a sound plan for the parents to take over the child at the stage where integration having been established, secondary experience comes into the picture. Often parents who have been unable to make adequate primary provision can successfully meet these later needs; the child may well transfer the image of the "good therapist" on to the parents. We hear of this from parents and children subsequently, which is, of course, interesting information to receive, but we also have the opportunity in some cases of watching a similar development at the Bush, especially in deprived children, whom we dare not risk sending into a new environment, however favourable, during such a critical period. The usual practice is for the deprived child to move gradually into another group. The relationship established with the new therapist will be secondary experience, a transference largely based on the primary experience with the first, just as in analysis the transference to the analyst will be fundamentally based on the original experience with the actual parents.

This move presents emotional problems for the first therapist; it is no easy task to hand over, however gradually, the child with whom there has been a deep involvement, but final separating-out is essential for recovery.

Through weekly individual and group discussions with the team, I have found that certain insights which we have gained together have been of value at such difficult moments. A devoted mother, I have said, gives her baby a splendid start in life, but there are likely to be areas in which she may be inadequate because of her own personal difficulties; we are likely to fail for the same reasons. She must comfort herself with the thought that her husband, members of her family, friends, teachers and so on, will make up for her inadequacies. We, as providers, must console our-

selves with the same reflection, and be able to let the child make good use of our failures.

A fear which has often surfaced in such discussions is that the primary experience provided by the first therapist will be given away by the child to someone else. This fear is not well-founded, because it will not be the good complete illusionary experiences that will be transferred; these will be incorporated, will be really part of the child by this time. Understanding of this makes the transfer to another group more tolerable for the first therapist.

We should be glad, I suggest, if the child can find with someone else at the Bush, at home, in a clinic later on, what we have not been able to give him; it is because of our emotional inadequacies that the child is needing compensating experience, just as the little child, for example, starting school, may often find with his first teacher experiences which will compensate him for shortcomings at home.

Finally it would seem to me that in any unit containing pre-neurotic children with a treatment team there will be providers, consumers (i.e. children) and supporters. (A provider in one situation, at one moment, may be a consumer or a supporter in another context.) The balance struck at any time between provision, consumption, and support, will determine psychic equilibrium within the unit, and consequently the extent to which primary experience will be available to the children in treatment.

SUMMARY

The need for the provision of primary experience in the course of residential treatment of certain deeply emotionally deprived children has been considered, in the context of therapeutic work in a boarding school for maladjusted children. The nature of primary experience and means of providing this have been discussed. A distinction has been made between the needs of such children before and after integration as individuals. Some of the special problems faced by the therapeutic providers of primary experience have been noted.

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A BEHAVIOUR MODIFICATION PROGRAMME FOR A CHILD WITH MULTIPLE PROBLEM BEHAVIOURS*

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INTRODUCTION

EVEN now, in its infancy, the behaviour modification movement has its full quota of prophets, critics and Don Quixotes (on both sides of the windmill). However, the present report is directed less to either crusaders or infidels, and more toward clinical psychologists who are in the process of deciding whether there may be something in behaviour modification technology which is of practical value in changing the behaviour of deviant children.

In considering this question, it seems to the present writers that there are at least three respects in which the behaviour modification literature is deficient. The data which will be presented in the present report are a modest attempt to rectify some of these deficiencies.

In general, the literature has been deficient in reports which present "*hard*" data, describing *successful* treatment of children who have *multiple* sets of problem behaviour. All three deficiencies will have to be met before behaviour modification technology can occupy a respectable position. These deficiencies are illustrated in sources such as the excellent review by Grossberg (1964) or the presentation of cases in the edited volume by Ullman and Krasner (1965). In some of the studies the data collected were excellent, and describe dramatic changes, but the behaviour studied represents only "mild" or single classes of deviance. Illustrations of such investigations are to be found in the classic study by Jones (1924) on children's fears; Williams (1959) on tantrum behaviours; Harris, *et al.* (1964) on crawling; and Jones' (1960) review of the literature on the treatment of enuresis. These studies perform the necessary function of establishing the *possibility* that principles from learning theories do have practical implications for the treatment of deviant children. The fact is, however, that most children referred to clinics have four or five problem behaviours. There have been attempts to deal with children displaying multiple problems or highly aversive behaviour, but these attempts have been limited in several important respects. In some studies of this kind the investigators unfortunately have followed the clinical tradition and provided only general descriptions, by the therapist or parent, of behaviour change. The reports by Lazarus and Abramowitz (1962) and Patterson (1965a) are examples of studies which do not provide adequate criterion data.

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Lacking these, it is not possible to evaluate the effectiveness of the treatment. In a movement that is less than 10 years of age, it is perhaps to be expected that the earlier studies will show many defects. However, it is to be hoped that contemporary studies will not continue to make the same errors. It is of critical importance that we provide criterion data we can use to evaluate the effect of our efforts.

Another group of investigators provide an example of the second style of deficiency. This group has dealt with the behaviour patterns of the extremely aversive child, and they have provided excellent data describing the effects of their treatment programs. However, these researchers have not as yet been *successful* in producing a remission of deviant behaviours in their subjects. This latter group of investigators have attempted to deal with "autistic" children; Ferster and DeMeyer (1961), Wolf, Mees and Kisley (1963), Lovaas, Schaeffer and Simmons (1964), Bricker (1965), and Hingtgen, Sanders and DeMeyer (1965). When compared to the results produced by traditional treatment programmes, the efforts of the behaviour modifiers are dramatic indeed. In spite of the fact that the data from these studies are of high quality and attest to significant changes in the behaviour of these children, the primary patterns of deviant behaviour persist for these subjects. If we hold to a rigorous definition of the term "successful" we cannot claim as an example the efforts of the behaviour modifiers with autistic children.

The present report describes a set of conditioning programmes for the treatment of a pre-school boy who was referred for several behaviour problems. The procedures are adaptations derived from the writings of Skinner (1958); in these procedures, both social and non-social reinforcers were used to shape the adaptive behaviours. The problem behaviours were "severe" in the sense that they were highly aversive to adults and to other children. In all respects he represented a typical case referred to child guidance clinics. In the study, an attempt was made to provide observation data showing the effect of the conditioning programmes for each set of deviant behaviours. In an effort to maximize the generalization and persistence of treatment effects, most of the conditioning procedures were introduced in the schoolroom and the home. For the same reason, much of the effort was directed toward re-programming the peer culture and the parents.

METHODS

The child

Karl was a 5-year-old boy whose parents had been asked to remove him from kindergarten. From the parent's report, it seemed that Karl was characterized by a multitude of deviant behaviour. For example, when separated from his mother, he became intensely aggressive, biting, kicking, throwing toys, screaming and crying. The teacher's legs were a mass of black and blue marks; on several occasions he had tried to throttle her. The mother also reported sporadic enuresis. His speech pattern was immature, showing several minor articulation defects. There was a general negativism in his interaction with adults; for example, it was extremely difficult to get him to dress or feed himself. The mother thought he might be retarded, but his I.Q. tested at the end of the study was well within the normal range. The mother felt that the behaviour pattern exhibited by Karl was so extreme and had persisted for such a period of time that it was extremely unlikely that he would change. As she

said, Karl was very "strong headed". She was especially concerned about the behaviour he exhibited when he was brought to school in the mornings. For example, on the previous week he had actually held on to her dress with his teeth in an effort to keep her at the school. At age 2 years, Karl was hospitalized for a few days' diagnostic study for suspected leukemia. The results of the diagnostic studies were negative; however, following the hospitalization it was increasingly difficult to leave him with baby-sitters.

At the close of the first interview, the mother smiled ruefully and said that she did not think that the programme we outlined would help Karl. However, his behaviour was so aversive to her that she agreed to participate in it.

His play interaction with other children was limited in frequency and rather primitive in quality. Much of the time he ignored the other children. When he did interact with them, there was an awkward and frequently aggressive quality to his behaviour which led the teacher to be concerned about their safety. As a result, much of the time he was followed about the room by an adult.

When presenting a report of a single case in which multiple problems are evident, it is very difficult to provide an adequate means for specifying the conditions under which replication could occur. By keeping the description of the child somewhat vague, the present writers could always claim that unsuccessful replication attempts by other investigators were involved with subjects that were "really" not like the one described by the writer. For this reason some effort was made to provide a careful description of the child; a procedure for doing this has been outlined by Patterson (1964). Karl was observed during the occasion of his first visit to the clinic for the presence, or absence, of 149 behavioural items. These behavioural items, plus the report of the parent and teacher as to "symptoms", constituted the description of Karl.

The behavioural items and symptom list had been previously used with a sample of one-hundred deviant boys to determine the factor structure which characterized this matrix. This analysis produced five oblique factors. The distribution of scores for each of the five factors had been transformed into deviation scores; and the distribu-

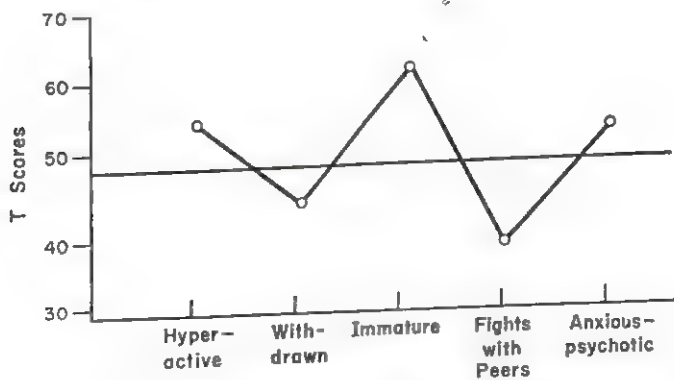


FIG. 1. The profile of factor scores describing Karl.

tions were normalized by the use of McCall's (1922) T score. The factor profile resulting from the combination of behavioural observation in Karl's first hour at the clinic, and the report by parents and teachers of his "symptoms", is shown (Fig. 1).

To summarize the description, Karl would be characterized as high on the Immaturity factor, and moderately high on the Hyperactivity and Anxiety-Psychotic factors. This profile was very similar to the mean profile for a class of deviant children obtained by Patterson (1964).^{*} The similarity of Karl's profile to that of the group indicated that he was a member of a class of patients that is often referred to clinics for treatment. As suggested earlier, these profile scores can serve as a basis of subject-comparison in attempts which might be made to replicate the present study.

The parents

Karl's mother was an attractive woman, 30 years of age. She dressed appropriately and showed herself to be a reasonably well organized housekeeper and mother. She had received an eleventh grade education. A cursory investigation of her background and behaviour did not reveal any marked psychopathology; this was in keeping with her MMPI profile of -97.

Karl's father was a husky, assertive man, 31 years of age. He had received a tenth grade education. A semi-skilled laborer, he was away from home much of the time. It was our impression that there was no obvious psychopathology characterizing the father; this was also corroborated by his MMPI profile of 13' 427 -09. Both the parents agreed in stating that the father had better control over Karl's behaviour than did the mother. They believed that the improved control was due to Karl's fear of the physical punishment which the father used on occasion.

Formulation

A paradigm such as the one currently being used by behaviour modifiers may generate statements which lead to successful outcomes of treatment programmes. The fact that the data support statements about treatment outcomes does *not* necessarily lend support to other statements, made from the same paradigm, which purport to "explain" the *antecedents* for the deviant behaviour. These are two separate sets of statements, and each require their own set of verification data. However, such tests will not be made until behaviour modifiers explicate their "speculations" about probable antecedents for various classes of deviant behaviours. It is our intention to provide here a set of testable speculations about the antecedents for behaviours of the kind displayed by Karl.

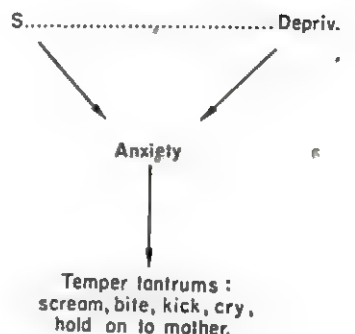
After our initial observations in the school, we outlined the following formulation for the temper tantrum behaviours displayed at school.

^{*}The mean factor scores for this group were: Hyperactive 53; Withdrawn 39.5; Immature 65.0; Fights with Peers 38.0; and Anxious-Psychotic 59.3. In the earlier study four out of a hundred deviant boys had profiles of this kind. This group of four boys were highly homogeneous as evidenced by Haggard's *R* (1958), coefficient of profile similarity, of 0.73. The intraclass correlation took into account variations in level, scatter, and ranking of profiles for the group.

Being left at school was a stimulus associated in the past with deprivation state

This deprivation state, and cues associated with it, elicit an emotional state. This emotional state was labelled "separation anxiety".

The eliciting cues (*S*) and the anxiety state produce high amplitude behaviours which are reinforced in two ways. (1) These behaviours frequently terminate the presence of the aversive stimuli and (2) they are also maintained by positive social reinforcers.



The key concept in this formulation was the use of a deprivation paradigm to explain the presence of anxiety in Karl. Such an approach is based upon the assumption that deprivation of social reinforcers creates an emotional state.* We assume that such deprivation must occur frequently in the lives of most children but that it is most likely to produce an intense emotional reaction in those children that we have labelled as "selective responders". Such a child has been conditioned to respond to social reinforcers dispensed by only a limited number of social agents.† The main result of selective responding is that the absence of the mother (parents) signifies that social reinforcers are no longer forthcoming. Thus when left at school or with a babysitter, he is, in effect, placed in an immediate deprivation state. The stimuli associated with the onset of this deprivation constitute a set of eliciting stimuli for the emotional state which typically accompanies this kind of deprivation. This complex of eliciting stimuli, deprivation and accompanying emotional state are usually labelled as anxiety.‡

*The existence of such a state, and the appropriateness of the label "anxiety" is attested to by a series of laboratory studies. A series of instrumental conditioning studies have shown that children who have been deprived of social contact for a time are more responsive to social reinforcers, Walters and Roy (1960), Walters and Karol (1960), Erickson (1962), Gerwitz and Baer (1958). There are also data showing the relation between deprivation of social reinforcers and physiological measures of anxiety. Unpublished data from our own laboratories showed that social deprivation produced a significant increase in "anxiety" as measured by skin conductance. A group of fifteen first and second grade girls were isolated while they responded to the apparatus (without being reinforced). There was a significant increase in skin conductance from the first to the second half of the trial ($P=0.03$ level).

†Karl seemed to be a good example of the hypothesized relation between selective responding and deviant behaviour outlined by Patterson and Fagot (1966). Their laboratory findings showed that some boys were responsive to social reinforcers dispensed by only one or two of the three major classes of social agents (mother, father, or peer). Such boys were more likely to be described as deviant when rated by teachers. In the present case we believe that Karl was responsive to social reinforcers dispensed by only a few people, e.g. his mother and his father. By and large, his behaviour was not under the control of reinforcers dispensed by peers. Quite possibly this lack of control was due to the fact that Karl was raised in the country and had little opportunity to learn to be responsive to peers.

‡The data reported in the Patterson and Fagot publication offered some support for these speculations. Boys who were shown to be responsive to social reinforcers dispensed by mothers, fathers, and by peers were described by teachers as being the most anxiety-free. On the other hand, boys who were selectively responsive to only one or two of these agents were also rated as being more anxious.

It would seem to be the case that not all deprivations led to anxiety states for Karl. For example, he could play by himself in the yard for extensive periods of time. We assume that the stimuli associated with some deprivation states would be more aversive than others. For Karl, it seemed to be the case that he was most anxious in deprivation conditions that he could not terminate upon demand. For example, being left at school was a stimulus associated with long periods of social deprivation; in addition, he had no control over the length of time which he was to be deprived. His playing in the yard by himself was a deprivation state which he could terminate at any time by simply going into the house. In summary, it was postulated that there was a relationship between deprivation of social reinforcers and anxiety; a relation between selective responsiveness and anxiety; and a relation between control over the period of deprivation and level of anxiety.

Karl has learned to avoid the onset of this anxiety by throwing temper tantrums, kicking, biting, etc. This behaviour was reinforced either when the mother remained at the kindergarten in an attempt to comfort her son; or when the teacher interacted with Karl and attempted to quiet him by holding him or reading to him, etc. Thus, Karl's behaviour was being maintained both by the presentation of these positive reinforcers and by the avoidance of the deprivation state. It is important in this respect to note that we assumed Karl to be responsive to the teacher. Observations of Karl suggested that this was so; it also seemed to be the case that the presence of other children in the room making demands upon the teacher created a situation in which Karl was being minimally deprived most of the time.

In planning a treatment programme, it was assumed that the intense destructive behaviour owed at least part of their amplitude to the presence of the emotion, anxiety. One of our behaviour modification programmes must then deal with anxiety. However, reducing the anxiety will *not* necessarily extinguish the destructive behaviours; it may, for example, only reduce their level of intensity. For this reason, a second major component of the treatment programme involved the strengthening of socially adaptive behaviours which would compete with the occurrence of the behaviours associated with temper tantrums and other atavisms. Presumably relatively permanent elimination of deviant behaviours may best be achieved by programmes that include the conditioning of socially adaptive behaviours which compete with their occurrence. This second point of focus involved the training of both the peer group and the parent to respond positively to socially adaptive behaviours displayed by Karl. In Karl's case, we suspected that the parents were using negative reinforcers to control his behaviour and that there were few positive reinforcers dispensed by peers for socially adaptive behaviours. Most of the peer group seemed to find Karl's behaviour quite aversive and avoided him as much as possible.

In addition to the temper tantrums, there was another class of deviant behaviour which was of interest. The label used to characterize this second, broad class of responses was "negativism". Karl seemed to precede many of the dramatic temper displays, both at kindergarten and at the clinic, with a verbal warning. For example, he would state that he was going to kick the experimenter or the teacher. On many occasions he would refuse to comply with any requests with a flat "No". Frequently such behaviours would be reinforced by the behaviour of the adult. When faced with such "warnings", the adults would withdraw their requests. Perhaps the mother

learned that such "warnings" were stimuli preceding subsequent temper tantrums. Mother could avoid what was most certainly, for her, a negative reinforcer, by withdrawing her request of Karl. In this way, Karl was being reinforced in a variety of settings each day for a complex of behaviours which we have labelled as "negativistic".

It is clear that an effective treatment programme will require several different conditioning procedures. It will be necessary to condition a new set of responses to the cues eliciting the anxiety reaction. It also will be necessary to extinguish the destructive behaviours and teach him some alternative mode of responding. We also must increase the frequency of the few socially adaptive behaviours he does demonstrate. The peers in turn must be re-programmed to provide more social reinforcers for Karl, particularly for the occurrence of his socially adaptive behaviours. The latter set of procedures is pivotal, for it partially insures the persistence of any change in Karl's behaviour produced by our intervention. Finally an effective way must be found of altering the set of contingencies provided by the parents for Karl's anxiety responses, his temper tantrums, his immature behaviours, and his negativistic behaviours.

Treatment procedures

There were four conditioning programmes used in the study. The procedures were as follows: (A) an extinction-counter conditioning programme for the temper tantrum behaviours; (B) an extinction-counter conditioning programme for the anxiety reactions elicited when being separated from mother; (C) a positive reinforcement programme to increase the frequency of positive initiations between Karl and the peer group; (D) and finally, a programme to change the schedule of reinforcements used by the parents to maintain negativistic and immature behaviours. As some of these programmes were used simultaneously, confusion will be minimized by outlining the development of each of these procedures on a day-to-day basis.

October 5. Programme A (temper tantrums). Karl was brought to the door of the mobile laboratory to obtain a laboratory measure of his responsiveness to social reinforcers. He looked frightened (his pupils were dilated), and refused to come. When carried into the laboratory, he kicked the experimenter, screamed, cried, and attempted to destroy the equipment. The experimenter brought him into one of the cubicles, closed the door and pinned Karl to the floor by the ankles. While Karl screamed, bit, and threw objects, *E* made every effort to prevent Karl from injuring him, and sat looking as bored as circumstances would permit. *E* looked at Karl and talked to him only when he was reasonably calm. Karl was told he could leave as soon as he quieted down. The episode lasted about 30 min.

Programme D (re-train the parents). We had not planned beforehand to begin re-programming the parent in this session. However, when Karl displayed his tantrum behaviours, the mother was brought to an adjoining room and observed the interaction through a one-way glass. A second experimenter explained to her that we were introducing a "time-out" procedure for Karl. As long as the destructive behaviour lasted, he would be pinned down and effectively removed from all of the usual sources of positive reinforcement. The mother was told that such adult behaviours as "the mother stays in the classroom", "the teacher hugs him", "the

teacher looks frightened or reads him stories" were powerful reinforcers for temper tantrums. The behaviour of the experimenter with Karl served as a model for behaviours which the mother was to imitate.

October 6. Programme A (temper tantrums). The mother had to drag Karl to the clinic today. Once inside, he refused to accompany *E* to play room and was picked up (kicking, clawing, screaming and crying). In the play room he was pinned to the floor by his ankles and cried for 30 sec. As soon as he stopped the tantrum behaviours, he was released.

Programme B (anxiety). Patterson (1965a) described a technique in which dolls were used to represent situations in which a child would be separated from his mother. A similar procedure was used with Karl. After being presented with a situation in which the mother (doll) was separated from the boy (doll), Karl was asked if "the doll" would be afraid. If he said "No", he was reinforced with an M & M chocolate candy. He was also reinforced whenever he described behaviours which would compete with the occurrence of fear or temper tantrums, i.e. "I would play". The dropping of his M & M in his cup was preceded by an auditory signal coming from his "Karl Box". The "Karl Box" contained an electric counter, light, and a rather loud bell. Any one, or all, of these could be activated by *E*.

During this first session (15 min), Karl participated in a series of six doll sequences and received a total of thirty M & Ms.

Programme D (re-training the parents). The mother and the second *E* observed Karl's play room behaviour through an observation window. During the temper tantrum, the mother was shown the non-reinforcing (and non-punitive) behaviour of the *E* holding Karl. She, in turn, was encouraged, to leave him quickly at school and thus reinforce the tantrum behaviours as little as possible. Mother was impressed with the fact that temper tantrums lasted only a few minutes today.

After the session in the play room, the two experimenters, Karl and the mother talked for 10 min. Mother was instructed to reinforce him on those occasions in which he did not act in a frightened way when being separated from her, when he was co-operative, and when he behaved in a grown-up fashion. She was instructed to bring in notes describing four occasions on which she had reinforced Karl for any of these following behaviours: for not being afraid, for being co-operative, for being "grown up". Karl listened to this interchange with some interest.

Programme C (programme to increase positive interaction between Karl and peers). The "Karl Box" was used during the recess period at kindergarten. Karl was told that the buzzer would sound each time that he "played with another kid without hurting him". If Karl were within range, *E* dispensed social reinforcers for appropriate initiations, i.e. "That is good, Karl". He was also informed that the candy which he earned would be divided among all of the children and distributed during snack time. He earned seventy M & Ms in a 10-min period; during this time he displayed no aversive behaviours.

October 7. Programme A (temper tantrums). The same tantrum behaviours were observed at the clinic. The same procedures were applied as described for the previous day. However, today the behaviour terminated as soon as Karl was carried into the play room.

Programme B (anxiety). The same doll play procedure was used as described for

the previous day; the session lasted about 20 min. Karl earned thirty M & Ms and a plastic ship. (The latter we "traded" in for ten M & Ms.) All of the reinforcers were delivered immediately and accompanied by the sound of the bell in the "Karl Box".

Programme D (re-train the parents). The mother observed Karl's behaviour in the play room. She was told of the necessity for reinforcing appropriate behaviour immediately. She was also reminded of the importance of *not* reinforcing maladaptive behaviours, such as non-co-operation, temper tantrums or immature behaviours. The interactions of the experimenter and Karl were used to illustrate these points.

During the "group" interview which followed, the mother reported with pride that Karl was co-operative several times yesterday. Karl was very pleased with her remarks. She gave the following written examples of her efforts to reinforce him.

- (1) Karl put away his clothes for me and I told him that he was a good boy and hugged him.
- (2) Karl got a diaper for me and I told him how nice he was to help me take care of his baby brother.
- (3) Karl went to bed without any argument and didn't wet the bed and I told him how grown-up he was getting.
- (4) Karl picked up walnuts for me and I told him he was really getting to be such a big boy and kissed him.

Programme C (interaction of Karl and peers). The other children had received their M & Ms from Karl's previous day's work and were curious when *E* again appeared with the box. They asked *E* what it was, and *E* told them that it was a "Karl Box". They asked, "What is a Karl Box?" *E* said, "It is a box that makes a noise, and gives candy whenever you talk to Karl". Immediately several children said "Hi Karl" to the box. *E* said, "No, you must say it to Karl, not to the box". The peers then received 150 reinforcers for initiating social contacts with Karl. He in turn was reinforced for responding appropriately and for initiating contacts of his own. The conditioning session lasted only about 10 min. The M & M bonanza was again distributed to all of the children.

October 8. Programme A (temper tantrum). Karl began to whimper as soon as he saw the experimenter's reception room and ran and hid. He then kicked and clawed as he was picked up and began to cry loudly. He was told that he could earn M & Ms by walking up the stairs himself.

He was placed at the bottom of the stairs; but he refused to move. The experimenter commented that Karl was not screaming, kicking or hurting people even though he was a little afraid. At this point the buzzer sounded on the "Karl Box". After a few seconds Karl was again asked to place his foot on the bottom step; but he refused. After a moment, the experimenter said, "Too bad, the next time the box went off you were going to earn one of these plastic boats. Guess I'll just have to keep the boat and carry you up the stairs again." There was a moment of silence at which point Karl said, "Suppose you touch my hand and see what happens". The experimenter touched Karl's hand. Karl immediately placed his feet on the stairs. The buzzer sounded and Karl was handed the plastic boat. At this point, he walked up the stairs and was reinforced by the bell for each step into the play room.

Programme B (anxiety). Karl and experimenter sat in the doorway of the play room. The mother was instructed to say "Goodbye, Karl", and Karl in turn was told

to say goodbye to the mother while she walked across the room. As Karl said "Goodbye", he was reinforced by the bell and by the *E* saying "Very good, Karl". Karl was asked if he was afraid. He said that he was. *E* said "But you did sit there. You didn't run after her, and you didn't scream or kick. That is very good." (Bell sounded.) This was repeated several times with the mother moving further away each time until she walked across the lawn as Karl waved goodbye from the second-story window.

Programme D (re-training the parents). Mother reported that Karl was making good progress both in being able to tolerate her leaving him at school, and also in his increasingly co-operative and mature behaviour at home. Both the *Es* and the mother praised Karl, who was obviously very pleased. Mother brought her "homework" with examples of how she had reinforced Karl for these behaviours on the previous day.

- (1) Karl took his bath without any argument at all and I told him how proud I was of him and let him sit in my lap in the rocking chair for a while.
- (2) Karl went to bed and I told him how big he was for it and kissed him.
- (3) Karl got into the car to come to the University without arguing and I told him how nice he was.

We pointed out to the mother that she still found herself doing for Karl things which he could do for himself; e.g. tying his shoes, buttering his bread. We practised breaking such a behaviour down into small steps and providing reinforcement for *any kind of progress* rather than waiting for terminal behaviour before reinforcing. We also set up a point system so that each time Karl co-operated in one of these new behaviours he received a point, which mother recorded as part of her homework. When he had earned ten points, Karl could select any one of the plastic toys from our display.

Programme C (peer and Karl interactions). The school period was highly structured today. It was not possible to condition for peer interaction without disrupting the group. We left shortly; Karl was obviously disappointed, but remained in the group.

October 11. *Programmes A and B* (temper tantrums and anxiety). Karl walked up to the play room to the accompaniment of the bell and much praise from his parents and both *E*'s. He said that now he only felt a little bit afraid when leaving his parents. We all agreed that he would no longer have to come to the clinic.

Programme D (training the parents). The father, who had been absent from home during the past week, had returned. The procedures were reviewed for him in the clinic with mother and Karl present. Arrangements were made for the remainder of the work with parents to take place in the home.

Programme C (peer interaction). Neither experimenter was able to go to the school today.

October 12. *Programme D* (training parents). One of the *Es* went to Karl's home along with an observer. Karl was extremely co-operative in following his parents' requests. *E* followed the mother around, offering suggestions on the best way to interact with Karl. When mother was slow in reinforcing him, *E* again explained the importance of the immediacy of reinforcement. In addition, the mother was again shown the principles of shaping successive approximations to a desired behaviour. As an example, she asked Karl to comb his hair which he had not done before. She was

then instructed to reinforce him for the *attempt* (which was actually a fairly good job). After several such successes it was explained to her that she was to reinforce Karl tomorrow only when he had done a better job. A similar procedure was begun in shaping the behaviours involved in tying his shoes.

Programme C (peer-Karl interaction). The previous programme was continued. M & Ms were made contingent upon Karl's initiating social contacts and peers initiating contacts to Karl.

October 13. Programme D (re-train the parents). Karl was again observed at home. He showed no deviant behaviour. Mother reported that she had reinforced Karl for improving in tying his shoes, and for hair combing. *E* reviewed for mother the general principles underlying the approach with Karl and explained how she might adapt them to use in future situation, such as leaving Karl alone in the evenings with a baby-sitter. Mother reiterated that Karl was like a new boy and they were delighted with his progress.

Programme C (peer-Karl interaction). Today there was no conditioning in the classroom.

October 14. Programme B, C and D. The mother came to the school and operated the "Karl Box". She was instructed to reinforce Karl for playing with other children, or any socially appropriate behaviours which resulted in his staying away from the immediate vicinity of his mother.

Mother, teacher, and Karl agreed that there was no reason for continuing the programmes as there were no further behaviours that anyone believed should be changed. It was arranged with the parents, and the teacher, to follow up the effects of the programme by observing Karl in the school for several weeks following the study.

Procedures for collecting data

All of the observation data used in testing the effectiveness of the treatment programmes were collected in the classroom setting. In the first introduction to this setting, two observers, seated in the classroom, dictated narrative accounts of Karl's behaviour, and the reactions of the teachers and the peer group. These initial impressions provided a basis for constructing a check list that was introduced during the second day's observation. Using the check list, observers tabulated the occurrence of the following behaviours: (1) the frequency of positive initiations, i.e. talking to another child, smiling, by peers to Karl. (2) the frequency of his positive initiations to peers. (3) the occurrence of withdrawal or isolation from the group, e.g. sitting 3 or 4 feet away from the group and not attending to or participating in the group activities. (4) the occurrence of negativistic behaviours, e.g. when asked to join the group, play a game, come into the room, etc., his behaviour indicated non-compliance. (5) temper tantrums; when being left by parent behaviours occurred such as: cry, scream, kick, bite and hit.

The observations were made during periods ranging in length from 20 min to 60 min per day. The behaviours were tabulated by 14 sec intervals. To reduce the variability somewhat, the observations were collected during the same 60-min period each day (12.30 to 1.30). The data were collected each day during the time

immediately prior to the conditioning procedures introduced in the classroom.*

During the study, the data were collected by three different observers, but chiefly by one. On several occasions she was accompanied by an untrained observer. On the first such occasion 300 separate events were recorded; but the two observers agreed only 61 per cent of the time. On the second occasion, 264 events were noted and the two observers agreed 84 per cent of the time. This suggests that with a minimum of training, comparatively unskilled observers can be used to collect these kinds of data.

RESULTS

Each day the observers in the school provided an estimate of the duration of Karl's temper tantrum; this information was combined with the data from his behaviour at the clinic to form a "total" score for the day. A tantrum was said to have stopped when Karl had ceased to cry, kick, or scream for at least half a minute. During the 3 weeks previous to the study, the teacher told us that Karl had averaged about 30 min at the beginning of each school session. The data showing the effect of the programme on temper tantrum behaviours are presented in Fig. 2.

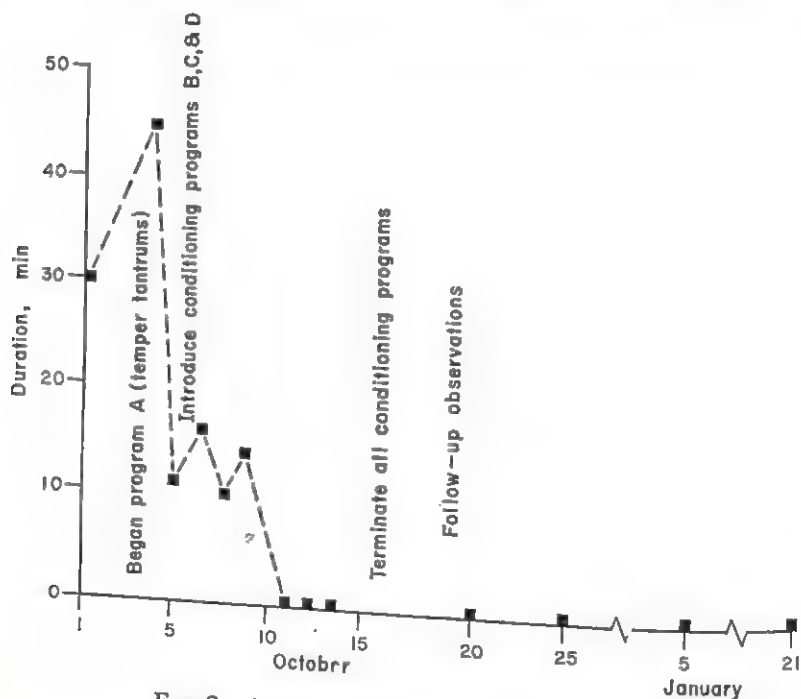


FIG. 2. Duration of temper tantrums.

In many respects, both the data and the procedure are similar to those described by Williams (1959) in which tantrum behaviours were controlled by the withdrawal of positive social reinforcers. As shown in Fig. 2, there was a marked reduction in the duration of the temper tantrums by the second day of the programme. After the initial,

*It required 3 days of trial and error to construct the check list; at this point we had intended to collect a week's baseline data for each of the deviant responses. However, on the third day of our being in the classroom, the teacher informed us that she would have to drop him from the class unless he improved. It seemed to us that her toleration of these behaviour for 3 weeks had already been above and beyond the call of duty; consequently, we initiated our conditioning procedures. Being Good Samaritans, however, resulted in our obtaining only one day's baseline observation data.

dramatic reduction in duration, they were being emitted at a reasonably steady rate for a period of about 4 days. During this "plateau", he displayed a total of about 10 min of tantrums per day. Most of these were occurring in the classroom on the occasion of the mother's leaving him with the teacher. In this setting, both of the adults were providing him with a good deal of reinforcement for tantrums. However, by the sixth day of the programme procedure, the adults no longer provided reinforcers for them and they terminated. They did not recur during the 3-month follow-up.

The second set of data showed the change in frequency of occurrence of two classes of behaviours observed in the nursery school. The first category, "isolated", was defined by such behaviours as sitting several feet apart from the group.

Most of the time the children were engaged in a series of organized games, story-telling and group singing. These provided an occasion in which the teacher frequently made suggestions or demands to each of the children. Non-compliance with such demands was coded as "negativism".

If either of the behaviours occurred during a 15-sec time interval, it would receive one entry on the data sheet. The ordinate in Fig. 3 indicates the per cent of the 15-sec intervals in which they were observed to occur.

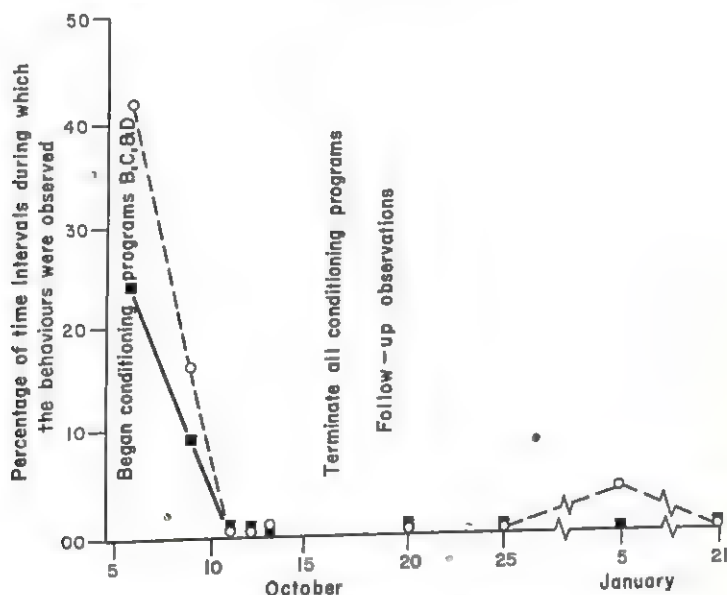


FIG. 3. Frequency of occurrence of negativistic and isolated behaviours.

■ Frequency of negativistic behaviours.
○ Frequency of isolated behaviours.

The data showed that by the second day of conditioning there was a dramatic drop in the occurrence for both classes of deviant behaviour. In both cases, the rate of occurrence dropped to almost zero and stayed there during the remainder of the 3-month follow-up period.

In observing Karl, the baseline data showed that the other children tended to avoid him, probably as a result of the aversive quality of much of his behaviour

(pushing, elbowing, kicking, throttling, pinching). The prediction was that if Karl's aversive behaviours decreased in rate the peer group would increase the frequency of their social reinforcers. Data presented in the report by Patterson and Ebner (1965) showed that when the aversive behaviours were decreased for two hyperactive children in different classrooms, the change was accompanied by a marked increase in the amount of social reinforcers provided (by peers) for one of the subjects *but not for the other subject*. This would suggest that the effect of a reduction in aversive behaviours is somewhat a function of the social group in which it occurs. To the extent that these variables are not understood, the final outcome of our treatment programme is determined in large part by chance factors. However, it should be possible to directly re-programme the schedule of reinforcement provided by the peer group, and the procedures innovated in the present study represented such an approach. If successful, the programme should result in an increase in the frequency of social initiations by peers and a corresponding increase in their use of positive social reinforcers contingent upon Karl's behaviours. The data to be presented here represented only a partial test of the hypothesis because the data were collected only for the occurrence of social *initiations* by peers to Karl. It was predicted that the conditioning programme would result in an increase in the frequency of initiations of positive social contacts made by the peer group to Karl and a corresponding increase in the frequency of positive initiations made by Karl to the peer group. The data for the frequency of social initiations consisted of such responses as: talking, smiling, playing, and touching. These events were also recorded by 15-sec intervals (Fig. 4).

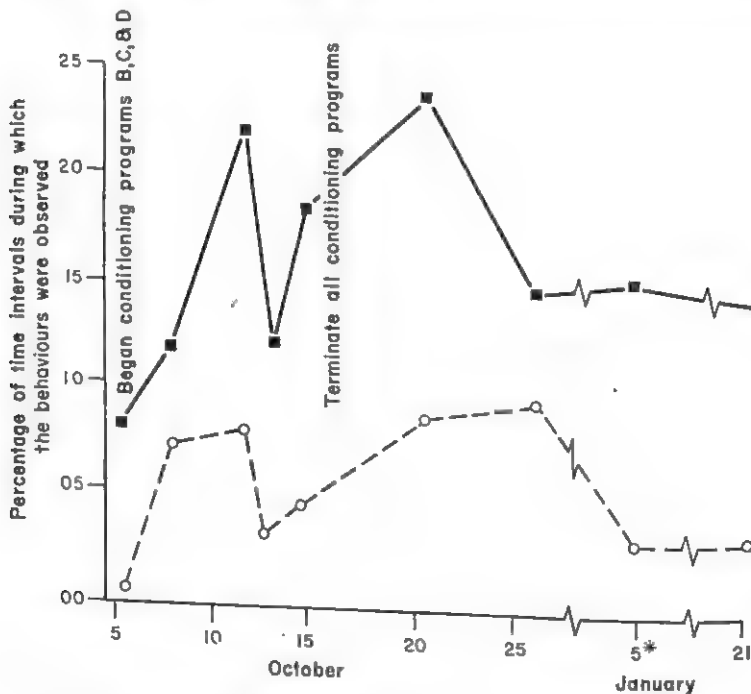


FIG. 4. Changes in the interaction between Karl and his peers.

■ Frequency of positive initiations by Karl.

○ Frequency of positive initiations by peers.

*Based upon only 20 min of observation; the remainder of the period was too highly structured to permit social initiations.

Early in the conditioning period, the frequency of occurrence of positive initiations by peers increased nine- or ten-fold. It should be kept in mind that these data were collected each day in the period immediately prior to the conditioning sessions; these data then reflect generalization, or transfer of conditioning effects.

There was a significant increase in frequency of social initiations by peers to Karl there was also a significant increase in the frequency of positive social initiations by Karl to the peers. Both sets of initiations were at least doubled during conditioning. However, 2 months after the termination of the study it is clear that some of these earlier, more dramatic gains have been lost. The data from the end of the follow-up period show that the overall gain was only two- or three-fold for both sets of behaviours.

Discussions with both parents and with the teacher during the follow-up period indicate that Karl is "a changed boy". The casual observer in the classroom would have no reason to select Karl as showing particularly deviant behaviour. His behaviour is characterized by less avoidance of social contacts and increased responsiveness to social reinforcers. Although still somewhat impulsive, Karl no longer displayed temper tantrums, nor did he isolate himself. During the baseline period, Karl would clutch a child by the arm and say such things to him as "I like you". He would then continue to hold the child's arm as he stared intently into the other child's face for a good 10 sec.* These primitive interactions no longer occurred. By any reasonable criteria, the changes in Karl constituted "successful treatment".

DISCUSSION

In some respects, data of the kind presented in this report are becoming commonplace. They show that manipulation of reinforcement contingencies has a significant impact upon behaviour; these findings in turn have practical implications for the treatment of children with deviant behaviour problems. The first "rush" of data collecting activity served both to reiterate our faith in the Law of Effect, and also to definitely place the promissory note proffered by the behaviour modifier in a place of prominence. However, at this point in the development of the field, we should be able to raise questions which are more sophisticated than those which characterized the earlier investigations. There is one set of questions which have been encountered repeatedly in attempts to carry out behaviour modification studies in the laboratories here at Oregon. The general question concerns statements about the variables which determine the persistence and generality of treatment effects. In our first studies we were impressed by the fact that we were obtaining dramatic generalization of conditioning effects (Patterson, 1965a, 1965b). In one of these studies the control over hyperactive behaviours quickly generalized from the conditioning periods to occasions in which the child was not directly under the control of the apparatus. We assumed that the generalization occurred because of the similarity in stimulus components present during conditioning and those present during the remainder of the day. In fact, our procedures had been constructed in an effort to maximize

*This latter set of behaviour was of particular concern to the writers because of its similarities to atavistic behaviours of this kind occasionally observed in schizophrenic children. Following the study, Karl was examined by an ophthalmologist who prescribed glasses. These "primitive" behaviours disappeared.

just such transfer of effects. For example, in the series of studies using hyperactive children as subjects, the conditioning was carried out in the classroom setting on occasions when the subject was engaged in routine classroom activities (Patterson, 1965b). The observation data obtained in this series of studies showed that not only did the conditioning effects generalize, but they persisted over extended periods of time. The data presented by Patterson and Ebner (1965) showed that a drop in the rate of production of deviant behaviour can produce an effect on the social environment. In *some* groups, when the subject becomes less deviant, the peers began to dispense more positive social reinforcers. Presumably, these reinforcers are contingent upon social behaviours which would compete with the occurrence of the deviant behaviours. However, as yet there are no data available which show that this latter hypothesis is indeed the case.

Our assumption is that the effect of the conditioning (or any successful treatment) produces a re-programming of the social environment; the altered programme of positive and negative reinforcers maintains the effect of the initial behaviour modification. The fact that the peer group now responds by dispensing more social reinforcers also means that the effect would "generalize" to any social setting in which one would find members of this peer group. In effect the term "stimulus generalization" is an oversimplification. For this reason, in our own discussions about the process, we use the phrase "re-programming the social environment" rather than "stimulus generalization".

There are several implications which follow from such a reformulation. For example, if the social environment does not increase the frequency of social reinforcers for socially adaptive behaviours, then any "improvement" occurring from a treatment programme will be of short duration. *Or*, if the social environment continues to "pay off" for the deviant behaviour at a very high rate, the likely outcome would be very little "improvement". An example of the latter would be the attempt to shape some socially adaptive behaviours in an institutional setting which is programmed to pay off heavily for deviant behaviours; e.g. institutions for delinquent adolescents have been shown to provide 70 per cent positive reinforcement for deviant behaviours (Patterson, 1963; Furness, 1964).

Taken together, the implications of these trends in the data are quite clear. The major focus of the behaviour modifier should be upon the task of directly manipulating the reinforcement programmes being provided by the social environment, rather than upon the behaviour of the individual subject. In effect, we are accusing the behaviour modifier of following too closely the medical model. In the medical model, the behaviour modifier would remove the "tumour" (change the deviant behaviour) and then terminate his treatment programme. It is reasonable to believe that changing deviant behaviour is simply not good enough; the goals for the behaviour modifier must *also* be that of re-programming the social environment in which the subject finds himself.

Attempts to re-programme the social environment are only just beginning. The programme described by Birnbauer (1965) and by C. Hanf (personal communication) are extremely provocative. In these attempts, the parent and child are observed interacting under relatively controlled laboratory conditions. The parent is rein-

forced for appropriately reinforcing the child. In our own laboratories, we have recently completed the development of a programmed teaching manual for use by parents and teachers. The main programme consisted of 120 frames which describe the concepts of social reinforcers, extinction, negative reinforcers, latency of reinforcement, and accidental reinforcement of deviant child behaviours. For each of the families which we are now investigating, the observation data in the home and the school are used to develop a branching programme for use by other mothers who have children with similar problems. For example, based upon our experience with Karl, we now have a fifty frame programme on separation phobia and temper tantrum behaviours in children. These programmes will be used in conjunction with our attempts to develop conditioning procedures to be used in re-training the parents *in the home*. This would mean devising new techniques to insure that the change in the programme of social reinforcers is provided both by adults and by peers. For example, it may be necessary to change our thinking about confining deviant children to groups in which they are mutually reinforcing each other's deviant behaviours. It is also necessary for us to re-consider the traditional clinical models which present the 1 to 1 relationship as *the* basis for behaviour change. Our speculations lead us to believe that rather than improving the technology for changing behaviour on a 1 to 1 basis, procedures in the future may rather completely differ from techniques for directly changing the behaviour of the child and focus instead upon a technology which will re-programme the social environment.

This is one further point which should be made in setting behaviour modification procedures in proper perspective. We might take the changes observed in Karl's behaviour as a case in point. Presumably, the conditioning procedures strengthened socially adaptive behaviours which competed with the occurrence of deviant behaviour. However, we do *not* believe that the conditioning procedures *shaped new* classes of socially adaptive behaviours, nor do we believe that the classes of deviant behaviours have been *extinguished*. In the present context, the terms "shaping", "conditioning", or "extinction" refer only to the fact that rankings have been changed in the hierarchy of response probabilities. The term extinction does not imply that such behaviours as "negativism" have vanished. By the same token, such socially adaptive behaviours as "smiling at a peer" are not in any sense completely novel to the child's repertoire. "Conditioning" as it is used here implies only that a member of the class of responses such as "smiling at a peer" are more likely to occur. In a sense, we see the effect of most modification or treatment programmes as consisting of the re-arranging of social behaviours *within already existing hierarchies*.

In this perspective, the "therapist's" main function is to *initiate* the first link in a chain reaction. Such a chain reaction could *not* occur unless the child had been previously conditioned for socially adaptive behaviours. Also, the major changes occur outside the conditioning trials as the social environment begins to respond differently to the child who is being treated. It is the social environment which supports (or sabotages) the changes produced in treatment. In some cases this change in the schedule of positive social reinforcements results in the increased visibility of a whole spectrum of social behaviours which had previously been at very low strength. This latter phenomenon is familiar to both behaviour modifiers and to traditional therapists.

SUMMARY

The report described a series of behaviour modification programmes for altering hyperaggressive, fearful, negativistic behaviours in a 5-year-old child who had been rejected by his peer group. The parents, teachers, peer group and the experimenters served as treatment agents. One programme counter conditioned the fear reactions; a "time out" procedure was used to alter the assaultive behaviour, and an operant conditioning technique was used to increase co-operative behaviours. Finally, a conditioning programme was initiated which altered the interaction between child and his peers. Observation data were collected prior to, during, and following the experimental programme to provide a basis for evaluating the outcomes.

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BOOK REVIEWS

Identification and Child Rearing. R. R. SEARS, L. RAU and R. ALPERT. Tavistock Publications, London, 1965, pp. 383. 63s.

A PUBLICATION by Robert Sears is always an important event, for Sears is one of the Grand Old Men of American child psychology and an author whose work has exercised a crucial influence in the developmental field for the last twenty-five years. In the belief that the two most fertile streams of thought in psychology are learning theory and psychoanalysis, Sears has for long attempted to bring about a rapprochement between these two by taking the statements and hypotheses of the second and converting them into the language and testable form of the first, thus rigorously and quantitatively investigating phenomena that are meaningful to the clinician and significant in "real" life.

In the present book Sears and his two co-authors have used this approach in relation to the concept of identification. Taking as their starting point Freud's theories on the anacletic and defensive nature of this process, they set out to ascertain the behavioural consequences of identification in four-year-old children in relation to five areas considered to be particularly pertinent to its expression, namely dependency, adult role playing, aggression, sex typing, and conscience formation. Specifically, they concerned themselves with two main problems: to discover, in the first place, to what extent the above five types of behaviour are correlated with one another and can thus be said to point to a unitary nature of the identification process, and in the second place to isolate the parental child-rearing practices and attitudes that may be regarded as antecedent conditions to such behavioural developments.

The prime virtue of this book is the admirable clarity with which the authors set out to describe their reasoning, basic assumptions, and methods and procedures. The research programme involved a most detailed and painstaking experimental and observational examination of forty nursery school children, whose fortitude in the face of this onslaught fills one with awe and admiration. Some of the methods, such as doll play and various parental inventories, were adapted from previous investigations, others were set up specifically for this investigation. Almost 100 pages of appendices give detailed descriptions of the various procedures, and are likely to provide a mine of information for future investigators. Altogether, 369 variables formed part of the data analysis, and though the authors frankly admit the difficulty of providing operational definitions for some of the concepts in which they were interested, their ingenuity and skill in this respect should prove a considerable benefit to others working in this area.

Substantively, what has emerged from all this labour? It is perhaps ironic to conclude that the main value of this research should be a negative one—negative, that is, in relation to the two principal aims of the investigation. In the first place, the intercorrelations of the various measures used for the five behavioural systems investigated indicate clearly that these cannot be regarded as unitary traits—at any rate not in 4-year-old children. Thus, with regard to conscience, for instance, Sears and his colleagues confirm Hartshorne and May's classical study on honesty, that a child's behaviour in one temptation situation does not necessarily predict his behaviour in another. It is the findings on the structure of dependence, however, that have particularly far-reaching implications, for Sears has for long concerned himself with this characteristic as one of the prime motives of childhood and, in the context of the present study, regarded it as the basic source of reinforcement in the identification process. To find now that the various dependency measures employed here give no support to the notion of a unified behaviour tendency is a challenge indeed! It is very much to the credit of the authors that they discuss the implications of these findings for their own theoretical position with such frankness. It is not often that one meets willingness to be convinced by data to such a degree as this.

Of even greater significance in the long run, however, is the failure of the authors' second aim, namely to establish consistent antecedent-consequent relationships. Sears has spent a lifetime in pursuit of this task—attempting to stipulate, often on a retrospective basis, the parental attitudes, infantile experiences, and parameters of the child-rearing process associated with various aspects of child behaviour. Here too the main conclusions of the present study concern the inconsistency of the various relationships investigated, as seen, for example, in a frequent lack of correlation between measures, in often quite inexplicable differences in findings between the sexes, and in some unexpected positive findings that make one wonder whether they will ever be replicated with another sample. The correlational approach has, of course, its use in highlighting possible relationships, but particularly when a time interval of several years intervenes between the variables compared, its findings must be interpreted with caution. Thus Sears has always written as though he believes in the idea of the "empty organism"—the notion that every aspect of a child's behaviour has been put into him, as it were, by the environment, and all correlational relationships tend to be interpreted by him in this way. The possibility that cause-effect sequences may also operate the other way, that parents react in particular ways to children's intrinsic peculiarities, is not considered. Yet the only way in which such correlational relationships can be interpreted with any degree of confidence is by a direct examination of the processes involved, and perhaps the most significant conclusion which emerges at the end of this book is the authors' admission that our knowledge of the nature of identification can only be substantially advanced if we examine directly the conditions and consequences of the processes of attachment and imitation in the first two years of life. It is typical of their intellectual honesty that Sears and his colleagues are able to appreciate the limitations of their own approach and to conclude that "until these processes have been examined fully, there seems little likelihood that greater precision in the kinds of parent-child measurements we have used in the present study will aid materially in determining whether primary identification is a necessary or adequate theoretical construct for the explanation of such regularities in the socialisation process as have been revealed here".

H. R. SCHAFER

Children in Collectives—Child-rearing Aims and Practices in the Kibbutz. PETER B. NEUBAUER (Ed.) C. C. Thomas, Springfield, Illinois, pp. 383. \$11.50.

BOTH the title and blurb ("A unique study . . .") seem designed to conceal rather than reveal what is to be found between the covers. It is in fact the proceedings of a one-week conference held in Israel in 1963, intended as a meeting-ground between prominent Israeli educators, psychologists and psychiatrists, and distinguished visitors from other countries. The participants clearly had an exciting and profitable week, but the reader faced with their verbal exchanges in undiluted form is apt to be somewhat bewildered, if not exasperated. After a brief introduction consisting largely of formal speeches ("greetings of the Ministry of Education") one is suddenly plunged into the midst of discussions which assume that one is well acquainted with the kibbutz setting. One gathers that the participants had the benefit of enjoyable visits to different kibbutzim, and had been provided with a set of working papers. It is perhaps a reasonable guess that the latter are reproduced as appendices—the editor remains silent about this. At any rate, if one hopes to make sense of the discussions it is essential to begin by reading the appendices. This also helps to clarify certain terms such as "metapelet" (a children's nurse) which occur without any explanation, though the attentive reader has a good chance of succeeding in such concept-attainment tasks.

In spite of numerous irritants, not the least of which is tedious repetition, the book does provide many valuable insights into child-rearing problems in a collective, mainly through the Israeli participants who offered first-hand observations and experiences. Two of the major issues considered were the effects of multiple mothering, whereby child care to a large extent devolves upon the metapelet, and the problems of adolescence. The discussions were mainly couched in psychoanalytic idiom, and were largely speculative: since the children are not housed with their parents, do they have opportunities of witnessing the "primal scene", and what is the effect on the length of the oedipal period? It is surprising, by contrast, how little information is available as a result of systematic observation of child behaviour, and Dr. Himmelweit rightly stressed the need for such research. Although children grow up in conditions very different from those of their western cultures, or even urban Israeli society, the striking fact is that the incidence of mental disturbances and similar indicators does not appear to diverge greatly from what is found outside the kibbutz. Perhaps the greatest weak-

ness of the discussions lies in their lack of global perspective; social anthropologists would have supplied a useful corrective there, since there is probably hardly any feature of kibbutz life that could not be duplicated elsewhere. Thus multiple mothering is common in various cultures, and the sharing of rooms by adolescents of opposite sexes is not unknown. The only unique element is that these norms of conduct have been quite deliberately fostered rather than unwittingly evolved. Hence it would seem to be particularly important to assess the outcome objectively. For example, the encouragement of social co-operation is one of the cornerstones of kibbutz ideology; but in a recent study it has been shown that kibbutz youth, in a prisoners' dilemma type situation, do not adopt a strategy more co-operative than that of the ordinary run of American college students. By itself, this may not mean very much, beyond indicating the need for caution in speculating without empirical evidence.

What shines through all the discussions is the sense of pioneering and adventure of those identified with the kibbutz ideals. One envies the visitors their experience, and it is a pity that all concerned have been so ill served by the form of this book. Two final illustrations of carelessness: it is stated that secondary modern school children in England leave school at sixteen, and a Professor of Psychology is reported as saying "I recall an International Congress on Phrenology last year"—surely both typist and editor must have been lacking in 'concentrativeness' here!

G. JAHODA

Determinants of infant behaviour III—*Proceedings of the Third Tavistock Study Group on Mother-Infant Interaction*. Edited by B. M. Foss. Methuen, London, 1965, pp. 264. 50s.

THIS third volume, like its predecessors, reports work in progress by members of the Tavistock Study Group in two closely related areas: mother-infant interaction and early social development. Both human and animal studies are included. The Group is composed mainly of psychologists, psychiatrists, and zoologists, with a sprinkling of other disciplines, and all are active and experienced investigators. The reader is thus taken into the front line of enquiry and allowed to listen in to discussions in which problems basic to several disciplines are thrashed out, assumptions examined and methods scrutinized more searchingly than could ever be done by a team drawn exclusively from one profession.

Familiar concepts sometimes gain a fresh dimension. Maternal protectiveness for example can be seen in biological perspective through Rosenblatt's careful experiments with female rats presented with young of various ages. Another side of it appears in the behaviour of mother monkeys studied by Hinde, who severely restricted the exploration of their babies out of a jealous objection to the attentions paid them by interfering 'aunts'.

Equally reminiscent of human behaviour are some of the reactions of an infant baboon to situations that arose in the course of hand-rearing by Thelma Rowell. Its tantrums and comfort-seeking behaviour when the "substitute mother" interrupted contact are illuminating for the dynamics of infant frustration reactions.

Reversing the perspective, Rheingold and Keene show us the human animal carrying its young from place to place in comparison with a wide range of other species: a field of enquiry hitherto untouched. (The mouth, we are informed, is not used by humans for this purpose.)

Two of the most ambitious contributions come from Gewirtz, who is engaged on a microscopic analysis of the stimuli impinging on children in contrasting Israeli environments—kibbutz, residential nursery, day nursery, one-child-family and multiple-child-family—and of the children's responses. This involves whole day records broken down into 30 sec intervals on upwards of a hundred infants, and Gewirtz remarks wryly that it will take years to analyse. He is able provisionally to report that measured by that convenient social counter, the infant's smile, the kibbutz comes second only to family life and proves significantly more risogenic than either day or residential nursery. He is, however, suitably cautious in interpreting this finding. That genetic differences cannot be ignored is brought home in a study by Freedman, who finds that the smiling rates of identical twins are significantly more similar than those of non-identical twins.

It is of interest to compare these highly controlled and quantified experiments with the two contributions from clinical workers. Milles, David and Appell offer and illustrate a method of observation of mother-child interaction based on precisely the sort of interpretive categories (mutual enjoyment, dependency, attitudes towards separation, etc.) which Gewirtz is concerned to break down into their component behaviour units. When his vast analysis is complete we shall be able to see how far the computer-derived behaviour complexes correspond to the clinicians' intuitively grasped entities.

The clinicians (including Freedman) are the only members of the team who describe individual children and mothers. Joyce Robertson presents two case studies covering the first year of life to illustrate the consequences of transient disturbances in the relationship arising from family crises in the second month. Her contention that each relationship and each child's personality development was permanently modified by these events, convincing enough from internal evidence, is tested severely in a discussion emphasizing objective criteria.

Finally there is a chapter contributed by the Editor, analysing the concept of imitation. This, the only purely theoretical contribution, is commendably lucid and thought-provoking. His clear and pleasant style might be studied with advantage by some writers who seem to consider that scientific presentation must be abstract, pretentious and fatiguing to read.

Like the previous volumes, this one is embellished with attractive and effective photographs. It will be of value to anyone concerned with current research in the field.

TERENCE MOORE

Brief Separations. C. M. HEINICKE and ILSE J. WESTHIEMER. International Universities Press, New York, 1965, pp. 355. \$8.50.

THE EARLY literature on maternal deprivation has frequently been criticized for its unsystematic and speculative character. No such criticism can be levied against the present book. It is methodologically sophisticated, painstakingly spells out the details of the various techniques used in collecting and analysing the data, and makes clear to the reader where findings end and interpretation begins. The subject matter of the book concerns the responses of ten young children to a temporary stay in a residential nursery and their behaviour subsequent to reunion with their families. A number of observation techniques, including a doll play situation, were applied before, during, and after the separation experience, and in addition casework interviews were held with the parents at various points during this period. Thus a considerable mass of data was collected for each case, and it is clear that the authors consider that such a study in depth more than compensates for the small number of children they were able to include in the sample. This, no doubt, reflects their clinical orientation, which is also seen in the considerable amount of space they devote to individual case descriptions and their (largely successful) endeavour to blend a systematic approach with an interest in the total child living (and suffering) in a real world.

In some respects the book is, however, somewhat confusing. Frequent reference is made to an earlier study by Heinicke along somewhat similar lines, but unless one has a copy of this report available for reference while reading the present book, the comparisons made may at times be difficult to follow. Also, the introductory sections on methodology lead one to expect rather more from a comparison with a matched unseparated control than was, in fact, possible, on account of the difficulty of carrying out some of the observational techniques in the children's homes. And finally, a chapter devoted to a theoretical interpretation of the findings will appear verbose rather than illuminating to most non-psychoanalytic readers. Nevertheless, the book does make a very real contribution to our knowledge of the effects of deprivation in its carefully carried out investigation and microscopically detailed description of the various behavioural functions under consideration. No attempt is made to deal with the slippery issue of long-term effects: the focus, as in deprivation research in general at the present time, is on current reactions, the sequence of stages in response, and thus on processes rather than on outcome. In general, the authors are able to confirm the descriptions offered by Bowlby, Robertson, and others, of the changes which the behaviour of young children undergoes under such circumstances, and the soundness of the methodology used in this investigation now gives added strength to this body of findings.

H. R. SCHAFER

Children of Sick Parents—an Environmental and Psychiatric Study. Maudsley Monographs No. 16. MICHAEL RUTTER. Oxford University Press, 1966, pp. xi+143. 45s.

This monograph is remarkable in two respects: first for the very comprehensive and just review of the literature relevant to each individual aspect of the study, and second for the ingenuity with which the maximum amount of information has been extracted from the available data. Dr. Rutter presents a model of what can be done in an investigation based on case records and very brief interviews, with the use of relatively simple statistics.

The aims of the study were to explore the relationships between illness and death of parents and psychiatric disorders in children. Children referred to The Maudsley Hospital with reactive

psychiatric disturbances were compared with matched groups of children attending paediatric and dental clinics, for the incidence of parental physical and mental illness, and of bereavement. Data about the Maudsley children were obtained from case records, and about the controls from brief interviews with their parents. One in five of the Maudsley children had a mentally ill parent, a rate three times that of the controls, while chronic and recurrent parental physical illness was twice as common in the referred group.

Maudsley children with reactive disorders were also compared with children referred for mental deficiency, epilepsy and organic neurological illnesses, and similar differences were found.

The matched groups of children were too small to show up statistically significant differences in the incidence of parental death, but a difference was found when all the Maudsley children with reactive disorders were compared with those having organic or intellectual impairments. In addition the death rates of both mothers and fathers were more than twice those expected from a calculation based on the Registrar General's figures for the general population.

Having established these facts, Rutter goes on to examine the psychiatrically disturbed children in more detail by a series of within-group comparisons between children who had experienced parental illness or death and those who had not. He explores the relationship in time between parental illness and the onset of disorder in the child, and also between the nature of the parental illness and the severity and extent of the child's disturbance.

This monograph presents the first controlled study of bereavement in children attending a psychiatric clinic. The greatest proportion of deaths had occurred in the third and fourth years of life, and there was a significant association between maternal death and psychiatric disturbance in girls. The onset of symptoms in children was often delayed until puberty, and morbid grief reactions following closely on the bereavement were most common in adolescent boys. Rutter concludes that in the young child the disturbance was often a response not to the death itself but to its consequences, which included the loss of a parent as a figure for identification.

A comparison of parents of disturbed children attending the Maudsley Hospital, and a group of Maudsley out-patients who were also parents but whose children were not disturbed, showed that while schizophrenia was relatively rare among parents of disturbed children, personality disorder and psychiatric illness affecting both spouses were significantly more common in this group.

A few minor criticisms can be levied at this work. We are told nothing about the form of the interviews with parents of control children. Although operational definitions are given for all categorizations of data, the reliability with which case records could be so categorized is not discussed, nor do we know how easy or difficult it was to extract uniform information from clinical notes, variable as these inevitably are.

This important study highlights the part played by a group of adverse events, parental illness and death, in the etiology of childhood psychiatric disorders. Such events are public in the sense that they present to doctors, and the affected children and their families are accessible to prophylactic intervention. More detailed studies are now needed of the impact on children of chronic illness and death of parents and the effect on children of different forms of psychiatric care for their parents, especially for parents with personality disorders; also calls for exploration. SULA WOLFF

Casebook on Family Diagnosis and Treatment. Family Service Assn. of America, New York, 1965, pp. 119, \$3.50.

THIS book is part of the major contribution which the family casework agencies of America have made and are making to the process of replacing the therapeutic model of the patient in his (family) environment, with one of the family as a system of individuals engaged in such a complex interaction that a request for help by one member can be seen, in the words of this book, as "a symptom of family dysfunctioning to be understood in the context of total family diagnosis".

The conceptual framework is briefly set out. Family interaction is defined as "the receiving and discharging of feelings, attitudes and behaviour within the immediate family", itself strongly influenced by the family's origin and the social environment. Particular attention is devoted to the family's vulnerability and strength, its distribution of roles, its goals and patterns of communication and response to the needs of members. The purposes of family treatment include altering its modes of communication; demonstrating to the family the connection between its pattern of interaction and the

problem referred, and helping the members to understand the nature of family tasks and their problems in dealing with them; their current alignments and roles and the effect of these on the operation of the family; and to break into destructive agreements between family members and encourage constructive ones.

The rest of the book consists of seven case records from family agencies, presented in a very usable form for teaching purposes, both as regards the selection of varied problems, and the varied focus of the material. Some cases focus mainly on the diagnostic process, and on the use of whole-family interviews; others summarize many months of work and demonstrate the flexible use of these global contacts with the family, in combination with interviews with individuals and with two or three family members. The techniques used are deceptively simple, based largely on the interaction in the here and now, and using this to illuminate the problems reported as troubling the family outside the sessions. Manipulation of the worker is firmly resisted and sustained ego-support is given, including a gentle insistence that all members take responsibility for their own actions and for working on the family problem. The whole family is skilfully encouraged to participate in the diagnostic process. Parents sometimes bring up their own early experience in group sessions, but this is usually pursued in individual sessions. Underlying this technique is a complex frame of reference, which includes manipulation within the family, neurotic marriage-choice and involuntary reconstruction of patterns familiar in families of origin, projection of parental shadows on to a scapegoat child or onto each other, and the stirring up of the parents' oedipal conflicts by the adolescence of a child.

The format is cumbersome, being a collection of larger-than-quarto pages of reproduced type-script threaded on the teeth (or ribs) of a plastic spine. However, the book makes a valuable contribution, especially for its concrete embodiment of the emerging principles of family diagnosis and treatment, and might have been worth a better production.

ELIZABETH E. IRVINE

Gestational Age, Size and Maturity. M. DAWKINS and W. G. MACGREGOR (Eds.) Spastics Society Medical Education and Information Unit in Association with William Heinemann Medical Books Ltd., London, 1965, pp. 115. 21s.

THIS BOOK consists of sixteen short papers, dealing with the definitions, causes and outcomes of prematurity and dysmaturity. It stems from a conference of obstetricians and paediatricians held in 1964, and is edited by the late Michael Dawkins and W. G. MacGregor of the Postgraduate Medical School.

The problem is well stated by the title. How does one distinguish at birth three sorts of babies: one who is maturing at the average rate, is average in size for his conceptional age but is simply ejected early from the uterus; and two others born at 40 weeks but one of delayed maturity and average size, the other of average maturity and small in size? These three factors, gestational age, size and maturity are related, but not, of course, identical. Some years ago international agreement to call all babies weighing less than 2500 g at birth prematurely hopelessly confused the issue. This book goes far to disentangling it. Mitchell and Farr, in particular, state the problem clearly, and review the various ways of assessing maturity at birth (though they seem unfamiliar with Vincent's paper, in which the radiological techniques used in older children were applied to the assessment of neonatal "bone age"). Neville Butler shows how both early birth (in terms of days in the uterus) and smallness at birth are associated, separately, with increased perinatal mortality, and how, in circumstances of high risk, the male succumbs more readily than the female, as also in childhood. Holt and Brett both discuss the neurological signs of diminished maturity. Neligan gives a valuable graph of the normal percentiles for weight for babies born from 32 to 42 weeks of gestation and Alison McDonald and others discuss the factors in the mother's life and in her pregnancy that are associated with low birth weight.

It would be idle to pretend all the confusion, of thought and terminology, has been resolved in these essays. Most of the authors still use the word "retardation" to refer to a low birth weight baby, whom auxologists would call "small", reserving "retardation" for a baby of proved low maturity. But this book is well worth reading by all concerned with handicapped children, for handicap is often associated with short gestation, low birth weight, dysmaturity at birth, or all three.

J. M. TANNER

Brain Damage and Behaviour. A Clinical-Experimental study. J. L. SCHULMAN, J. C. KASPAR and F. M. THRONE. Charles C. Thomas, Springfield, Illinois, U.S.A., 1965, pp. 164. \$7.00.

THE AUTHORS of this slender volume aim a weighty blow at some of the more facile generalizations, which are currently applied to the concept and testing of brain-damage. There is a tendency in the literature, and at clinic conferences, to use the idea of the "brain-damage behaviour syndrome" in children in a loose and uncritical manner; implicit in which is a unitary view of brain functioning. As the authors put it: "although we recognize that brain-damage may be manifested in a variety of ways . . . we, nonetheless, act as if 'brain-damage' is a single entity which will manifest itself repeatedly in a certain way, on each test, for each person suspected of being brain-damaged."

The monograph contains a useful and critical review of the procedures and problems in this field: the difficulties of formulating satisfactory definitions and criteria of brain-damage, and the shortcomings of the diagnostic and behavioural measures in general use. There follows a correlational study which sets out to answer three central problems: (1) to what extent do eight so-called indices of brain-injury (derived from the Draw-A-Person Test, the Bender-Gestalt Test, the Wechsler Intelligence Scale for Children, E.E.G. records, and a neurological examination) co-vary? (2) To what extent do the behavioural measures (hyperactivity, distractibility, inconsistency, and emotional lability) included in the "brain-damage behaviour syndrome" co-vary? (3) To what extent do the diagnostic measures, singly or in groups, predict the presence of these behavioural variables?

The analysis was based upon results of all these tests obtained from a group of thirty-five undifferentiated, retarded boys—relatively homogeneous in terms of age and educability. Criticisms of the design of the experiment are anticipated by the authors, and arise mainly from the restricted and homogeneous nature of the sample, a fact likely to reduce the size of the correlation coefficients. Despite arguments they put forward—practical necessity and certain theoretical advantages—for this selection of experimental subjects, it remains an unfortunate limitation in any final evaluation of the results. A four-point 'scale' which was used to judge the presence or absence or degree of brain-damage in relation to all eight measures is also open to criticism, because of its arbitrariness and the loss of data caused by its application.

Allowing for these reservations, the findings of the study remain (in the words of the authors) "rather disquieting"; and this is perhaps an understatement in view of the continuing popularity of these diagnostic techniques. (1) The individual diagnostic measures did not reach an acceptable level of reliability, and did not co-vary significantly. (2) Nor was there any evidence to support the concept of a syndrome of brain-damaged behaviours, as the variables involved did not co-vary. (3) Only one set of behaviours correlated significantly with both the diagnostic clusters which were found, and that correlation was in the wrong direction. On the basis of this evidence, and in terms of the indices used in this research, the construct of brain-damage—considered as a single entity—is nonsensical.

Those who believe that it is more constructive for psychologists to develop and apply tests which describe and measure the functional deficits manifested by brain-injured patients, rather than searching for inclusive "diagnostic" tests of "brain-damage", will find this book most valuable for its instrumenting of objective behavioural syndrome measures. These yielded higher reliability coefficients than the standard diagnostic tests. The authors have put forward a number of theoretical conceptions of brain activity, and they present a useful bibliography of 173 publications in this field. Altogether, this monograph is a worthwhile, if somewhat expensive, acquisition.

MARTIN HERBERT

Guidance in Adolescence. W. D. WALL. The Twelfth Charles Russell Memorial Lecture, 1964.

Obtainable from the Trustees, 17 Bedford Square, London, W.C.1, pp. 23. 1s. 6d.

CHARLES RUSSELL was a well-known club leader in Manchester and became the first Chief Inspector of Reformatories and Industrial Schools in 1913. He died four years later. His wife endowed an annual lecture in his memory and this lecture is the twelfth in the series; each has been given by someone chosen to speak in the spirit of Russell, and for his knowledge of working class and delinquent boys and girls.

Dr Wall, Director of the National Foundation for Educational Research, is the latest in a line of distinguished speakers. He has reviewed the psychology of adolescent development in its contemporary culture and social environment and then applied himself to what can be done to understand and help

adolescents. He stresses the apparent doubts and uncertainties of the older generation nowadays in handling youngsters and appears to direct his remarks mainly to teachers.

He backs up the need for character training in school, but applied by the teacher with insight that springs from dynamic psychology. The young also need to gain insight into themselves to bring their expectations into a realistic relation to their powers and abilities, and they also need to learn adaptability. All this is sound advice; Dr Wall seems to be on less sure ground when he comes to 'maladjustment'. For instance, he emphasizes that the plight of the withdrawn child is much graver than the aggressive child, and it is not clear on what grounds he makes this assertion. He also makes the sweeping suggestion that much of adolescent maladjustment is due to panic and that if teachers could help them over the meaning of emotional issues, this would help. However, these are minor criticisms of a survey of adolescent emotional development that is likely to be generally helpful for the understanding of teachers or others dealing with Youth.

W. WARREN

Maladjusted Boys. OTTO L. SHAW. George Allen & Unwin Ltd., London, 1965, pp. xi+168. 28s.

THIS is a lively and readable account, by its headmaster, of Red Hill, an independent boarding grammar school for the "education and psychological treatment of boys of very high intelligence". The school is a distinguished pioneer in this field, and Mr. Shaw writes on the basis of some 30 years experience with a particular type of maladjusted boy (i.e. those with an I.Q. over 130 with the ordinary run of symptoms seen in a child guidance clinic who are not psychotic, deeply schizoid or psychopathic in character).

The first section describes the policy, organization, and working traditions of the school. The second deals with the problems of individual boys as they relate to the home background and reveal themselves in treatment. Finally the educational aspects of the work are discussed by a senior teacher, Ivor W. Holland.

Although Otto Shaw is surely a specialist in his field, his sections of the book seem aimed more at the intelligent layman than the child specialist, either psychiatric or educational. The vivid, often dramatic, account of the origins, expression, and response to therapy, of maladjustment in his boys may well help to increase understanding in the general public. Especially welcome is his emphasis on the need to allow disturbed children to express their disturbance openly if they are to be helped. However, those who themselves are wrestling with similar problems professionally may well find his accounts too generalized and anecdotal to be really useful.

A second difficulty is that the book is written (as stated in the foreword) as a success story, and for this reason tends, at least for the reviewer, to assume the characteristics of a persecuting ideal. My battle neither to be overawed by, nor to dismiss summarily, his very considerable claims for his methods, would have been much helped by even one illustration of failure of tact, temper, or sense of humour. Especially in the rather brief discussion of staff relationships and meetings, a more detailed account of how staff are helped to struggle with, accept, and manage, the inevitable difficulties in their relationships to each other and to the boys, would have been a welcome addition.

The educational appendix by Ivor Holland, quieter and more unassuming in tone, gives an excellent and thought-provoking account both of the educational problems of the maladjusted boy and the closely interwoven links between education and therapy.

FREDA MARTIN

The Social Context of the Youth Problem. BRIAN WILSON. Charles Russell Memorial Fund, London, 1965, pp. 18, 1s. 6d.

CHARLES RUSSEL, a notable social worker of the late 19th and early 20th century, was most famous for his work on delinquency. The Thirteenth Charles Russell Memorial Lecture was given by Dr B. R. Wilson in October 1965.

In previous papers Dr Wilson had made it clear that he is an ardent traditionalist. It is difficult for traditionalists living in our rapidly changing society to write about any aspect of our life dispassionately, but it is perhaps the topic 'Youth' which causes greatest discomfort. Dr Wilson's aim was to discuss young people in modern industrial society *without moralizing*: unfortunately the aim was not wholly achieved.

The first section of the lecture is a very useful summary of one particular view of the 'Youth Problem': in all societies young people tend to be over-energetic and under-socialized; in our kind of society the problem is more acute and is made worse by the fact that social habits are themselves changing, thus making it difficult to 'impress firm moral standards' on the young. Wilson then contrasts the delinquency seen by Russell—a purely economic phenomenon—with the more general problem of the all-pervading 'Youth Culture' today. Here Wilson allows himself a series of rather sweeping statements about spivs and Teddy-boys, Mods and Rockers, the mass media, etc. This rather pessimistic picture of our society reaches its climax in the final paragraph, which contains this sentence: 'Ironically, in the affluent society, some young people really rather want to return to the squalor, the overcrowding and the dirt, and even to expose themselves to the disease, for the sake of the excitement'. . . . This sentence perhaps epitomizes Wilson's approach: on the one hand a flash of insight which is both very interesting and worthy of further study; on the other hand a certain question-begging in the uncritical acceptance of 'affluent society', and a tendency to make unwarranted assumptions. Does Dr Wilson have evidence to support his contention that young people expose themselves to dirt and disease for the sake of excitement?

DENIS LAWTON

Drug Addiction in Youth. Edited by E. HARMS. Pergamon Press, Oxford, 1965, pp. 211. 63s. This book appears to be an attempt to bring, under the term 'Youth', sufficient material to justify a title of Drug Addiction in Youth. There are fourteen contributors, many of whom are well known in the field of drug addiction in the United States of America, and eleven of whom are actually working in New York City. Five of the contributors are doctors of medicine. The others include psychologists, but it is not clear, from the list of contributors, from which professional field of endeavour some of the non-medical contributors originate.

The titles of the contributions include "The development of Narcotic Addiction among the Newborn" (hardly "Youth"); "Marihuana Use by Young People"; "Inhalation of Commercial Solvents: A form of Deviance among Adolescents"; "A Short History of Narcotics Anonymous Inc."; "The Future Time Perspective of the Adolescent Narcotic Addict"; etc.

Many of the contributions are anecdotal or general review articles, in which little or no new research or clinical material is presented. The word Youth, in many cases, is merely a term to allow of a general description of a problem as in such chapters as "Marihuana Use by Young People" which reviews the background history, effects, deliberations of the New York Mayor's Committee on Marihuana (1944), social factors in marihuana, marihuana use by the military, marihuana use as prelude to opiate use, etc.; the chapter "After-care Rehabilitation"; the chapter "A Short History of Narcotics Anonymous Inc." and so on.

In contradistinction to this general approach are the chapters on "Institutional Treatment of the Juvenile Narcotics User", which gives a good general description of the Riverside Hospital—a treatment centre for juvenile narcotics addicts (closed some years ago), and research contributions which are short, clearly written and to the point, such as "The Future Time Perspective of the Adolescent Narcotic Addict"; "A Comparison of the Rorschach Behaviour of Adolescent Addicts who have Died of an Overdose with Addict Controls"; "Attitudes toward Authority among Adolescent Drug Addicts as a Function of Ethnicity, Sex and Length of Drug Use"; and the chapter on "Inhalation of Commercial Solvents" with its supporting reports from Los Angeles and Sweden. These contributions are examples of the particularly refreshing and valuable parts of this book.

The book is patchy and uneven. It is really a collection of contributions about Drug Addiction some of which refer to Youth, but without any central theme, and where attempts are made to try to point the way ahead and to draw conclusions, they are somewhat rambling and unconvincing. The Editor notes in his Introduction . . . "Of necessity, the present volume does not provide systematic coverage, but an effort has been made to organize the available materials so that they will be meaningful and so that a total picture, if a sketchy one, is given. Several promised papers on significant topics were not forthcoming." The latter remark concerning the fact that several papers were not forthcoming might explain the glaring omission of chapters on amphetamine misuse, amphetamine and barbiturate misuse, and barbiturate misuse. Nor is there more than passing reference to pharmacological aspects. The absence of a chapter on L.S.D. taking can probably be explained in terms of the fact that preparation and publication takes some time, and that the

L.S.D. problem is comparatively recent. There is no index, though some references can be found at the end of some chapters, and as footnotes to others.

In spite of these deficiencies, however, and with its limitations, this book can be recommended as introductory reading, not only because of the several valuable contributions, but also because there is sparse literature on this topic of drug taking among the young. Recognizing that the major part of the book refers to the New York position and may not apply directly to the situation elsewhere, it is nevertheless helpful that a short and readable book be available to those who are concerned with the growing problem of drug dependence and misuse in this country.

Its title would best be changed to "Some Contributions on Drug taking with special reference to Youth".

P. H. CONNELL

Research in Behaviour Modification. Edited by L. KRASNER and L. P. ULLMANN. Holt, Rinehart & Winston, New York, 1965, pp. 392. 72s.

THIS is a companion volume to the same editors' *Case Studies in Behaviour Modification*, which contained reprints of previously published studies, mainly with a marked Skinnerian bias, of techniques applicable in behaviour therapy. The present book attempts to carry the earlier studies a stage further, and under the sub-heading "New Developments and Implications" it presents a wide range of theoretical and practical points concerning the future expansion of behaviour therapy along Skinnerian lines.

Unlike the earlier volume, the present book is made up of chapters specially prepared by various authors, each of whom has some experience of the difficulties encountered in attempts to modify human behaviour. In a book which contains so many excellent contributions it seems unfair to pick out one or two for special mention, but the chapters by Bijou (Experimental Studies of Child Behaviour: Normal and Deviant), Matarazzo, Wiens, and Saslow (Studies in Interview Speech Behaviour), and Krasner (Verbal Conditioning and Psychotherapy) deserve special mention because of the important practical applications they contain. On the more theoretical side the contributions of Kanfer (Vicarious Human Behaviour), Colby (Things to Come; Designing Neurotic Computers), Patterson (Responsiveness to Social Stimuli), and Bandura (Behaviour Modification through Modelling Procedures) are equally important because of the ideas which they present. Each of the seventeen chapters in the book has an introduction written by the editors, which provides a natural "link" not often found in edited books of this type.

As a whole the book provides a useful bibliography to the literature on behaviour modification plus a wealth of clearly thought out ideas and hypotheses derived from this literature. For all behaviour therapists it should be essential reading, and, in addition, it has that special merit of being suitable for recommendation to the experimental psychologist in search of hypotheses which have practical relevance—a rare combination to find in a single volume.

C. B. BLAKEMORE

Experiment and Tradition in Primary Schools. D. E. M. GARDNER. Methuen, London, 1966, pp. 211. 27s. 6d.

THIS is a report of a follow-up of Miss Gardner's two previous works: *Testing Results in the Infant School* and *Long Term Results of Infant School Methods*. The present volume includes a detailed report of the first of these studies which is now out of print, and was based on a comparison of the performance of children at 6½–7 drawn from five "experimental" and five "traditional" schools. The author has since been able to compile data drawn from twelve matched pairs of junior schools. The subjects of this second enquiry are aged 10–11. Once again, the children who were selected to represent the populations of each pair of schools were matched for I.Q., sex, and socio-economic status. They differed in that children from "experimental" schools had been taught in a freer environment throughout their primary schooling. In general, each of the twelve pairs of schools is represented by twenty matched pairs of children.

The main part of the book consists in a detailed description of the tests of attitudes and attainments used in the infant and junior studies, followed by the results of the two enquiries. Several of the tests of attitudes are ingenious and worthy of further exploration. Although in general considerable care was taken to establish some objectivity in scoring procedures, the reliability and validity of these measures

is often open to doubt. Taken as a whole, the results tend to favour the experimental approach, particularly in respect of ingenuity, "listening and remembering", sociability and written English. Control schools are slightly favoured by mechanical and problem arithmetic.

Surveys of this kind rarely yield altogether clear-cut results, and one's choice of teaching method must often be justified by theory and by more limited and structured experimentation. The survey type of study then serves as a critical check against the possibility of unforeseen side-effects resulting from the generalized application of such methods. Miss Gardner's work cannot be said to constitute overwhelming evidence in support of the freer approach of the "experimental" schools. On the other hand, few of her results favour the schools chosen as controls.

It seems altogether likely that success in the basic subjects can most readily be achieved by combining programmed teaching with the provision of self-direction in a structured environment, so reducing the time necessary for mastering of techniques and increasing the freedom of action of both learner and teacher. Miss Gardner's experimental schools appear to be more open-ended in their approach. One may hope that within the next decade, a sufficient number of schools may be found to conform to this more rigorous definition of "experimental", and that results will prove no less encouraging to their proponents.

E. A. LUNZER

Introduction to the Gifted. GERTRUDE H. HILDRETH. McGraw-Hill Book Company, New York, 1966, pp. xvii+572. \$7.95.

THE author of this book is somewhat handicapped by its title. To talk of "the gifted" carries echoes of the past. It takes the reader back to the 1920's when Greek stereotypes had not yet been challenged by long-term studies of the actual experiences and responses of human beings as they grow. The notions of "types" of children and "stages" of growth still exercised a paralysing effect on educational planning; and "ability grouping" with its ideal of homogeneous classes deflected attention from the variety, the complexity and the variability of boys and girls at every age.

Professor Hildreth, while aware of the evidence against all this, has not quite escaped from its effects. She uses the words capacity (potentiality) and ability (present performance) as if interchangeable; and she lapses often into terminology which encourages readers to think of the bright as, somehow, a group apart. Her whole approach is, for this reason, individualistic. The opening sections of her book give a survey of procedures involving segregation, acceleration or enrichment of programmes in primary and secondary schools in the United States of America and of relevant research there and in France and Germany. (The experiences of Scandinavia and Great Britain are, surprisingly, neglected.) This serves as an introduction to detailed accounts of provisions for rapid intellectual development in many of the subjects taught in primary, secondary and tertiary schools. Little is said of social development or the social determinants of learning. There is a pervading underestimation of the common humanity of all children. (Their "similarities" are occasionally mentioned, but without conviction.) Much is said of cognitive training. This may be interpreted as a recognition of the need for insight. There is little admission of the equally significant needs for participation in the activities of a group and acceptance by a group.

The teaching methods and materials described by Professor Hildreth are both interesting and desirable; but there is now reason to believe that pupils do not benefit by segregation in any form, with its accent on competition and defeat—either socially (a prefect system) or academically (tuition apart from those of differing initial competence). Boys and girls appear to mature in more wholesome fashion if their learning experiences offer opportunities of coming to terms with themselves and other people, in a setting which includes something like the variety of contacts which are to be found in the world outside. This is a finding to which social psychology and psychometry have made notable contributions in long-term studies in Great Britain and Scandinavia. Professor Hildreth's discussion would have reached higher levels if this had been lifted into prominence along with her discussion of individualised tuition in its various forms.

C. M. FLEMING

Mental Deficiency: The Changing Outlook. Second Edition. Edited by ANN M. CLARKE and A. D. B. CLARKE. Methuen, London, 1965, pp. xxi + 596. 63s. net.

THIS book is probably the most valuable single contribution to the study of the psychological and social aspects of mental deficiency. It should be read, and frequently consulted, by all professional workers in the field. It gives a masterly summary of the more recent literature, and points out gaps in knowledge and profitable areas for future research. The editors' intentions to demonstrate the use of the experimental method in the solution of problems in theory and practice, and the benefits which result from free interchange between the two, are amply fulfilled. The book in addition gives practical guidance to those whose duty it is to educate and treat the mentally defective so that they can take their place in an increasingly tolerant and healthy society.

In Part I an introductory chapter is followed by one on the prevalence of mental defect, the difficulties involved in survey methodology being emphasised. Part II deals with theoretical problems. In the chapter on criteria and classification the A.A.M.D. medical classification is described as excellent, a view not shared by many British mental deficiency specialists, who consider its aetiological pretensions dangerously misleading. The measurement of intelligence is expertly covered, and the following chapter on genetic and environmental studies of intelligence emphasizes the well-established fact of definite I.Q. increments following treatment in the deprived feeble-minded. The weak coverage of the aetiology of pathological mental defect evident in the first edition has been remedied by enlisting the aid of Dr J. M. Berg, an expert in this field. Learning, brain damage, and cerebral palsy, are excellently reviewed in separate sections. A chapter on epilepsy, in view of its numerical importance and clinical problems, would be an improvement on the present passing references if a counsel of perfection can be excused.

Part III, dealing with practical problems, gives, under the sure hand of Dr Gunzberg, a lucid exposition of the problems of psychological assessment, education, vocational and social rehabilitation, and psychotherapy, the latter including an appraisal of the effect of various hospital environmental factors. Chapters on the abilities and trainability of imbeciles, and on speech disorders and therapy, maintain the high standard. Professor Jack Tizard's contribution of longitudinal and follow-up studies is marred a little by his failure to point out that lower attainment levels in "institutional" patients, compared with those at home, cannot automatically be ascribed to an unstimulating environment. Other quite obvious interpretations are possible. The final chapter on adoption and fostering of children of the mentally deficient provides evidence to encourage a humane approach to a neglected problem.

Some eleven hundred references complete the book and are alone worth the price. As an introduction to the published work on the psychological and social aspects of mental deficiency this book is undoubtedly the "best buy". The editors and contributors are to be congratulated.

J. T. R. BAVIN

Psychopédagogie de premier âge. IRÈNE LÈZINE, Presses universitaires de France, Paris, 1964, pp. 210. FN. 9,00.

THIS is an introductory manual addressed primarily to those who work with young children, be it as psychologists or paediatricians, or as nursing staff, teachers or parents. In other words, it has the very practical aim of fostering a greater sensitivity to children's psychological needs among all those who deal with children. It is particularly concerned with the first three years of life, although quite often the author traces the development of typical subjects up to about the age of 7.

It is a short work which may be properly described as a distillation of the wisdom and insights gained in the course of 14 years of clinical, experimental and longitudinal studies by one of the most highly qualified and dedicated teams in this field. Although its purpose is practical rather than theoretical, there is nothing superficial about its mode of presentation. The main portion of the book is divided into two sections, one covering the routines of daily life (sleep, feeding, toilet-training, dressing and bathing), and the other the cognitive and dispositional acquisitions which the child encompasses in the course of these early years (perception, structurization of experience, social learning). In every one of these contexts, the problem are discussed in the light of clinical and statistical evidence, drawing not only on French work, but also on American, Russian and East European sources. (There is comparatively little reference to British work.)

Two features of the book are especially noteworthy.

The first is that there is no attempt to impose a uniform cyclical or spiral pattern of development held to be valid for all children, as in some of the work of Gesell. Instead, the author insists on the recognition of temperamental differences, with special reference to the characteristics of hypertonicity versus hypotonicity as described in the work of Mira Stambak (herself an associate of Lézine). Abundant instances are offered to illustrate that children differ both in their characteristic behaviour, and in the problems that they pose, according to their temperamental disposition. (The psychometrically minded reader may be left with the teasing suspicion that these temperamental types may well represent extremes on a continuum rather than values of a dichotomous variable.)

The second is the full and careful bibliography, which should make it an extremely useful source of reference for the research worker.

The book is authoritative and up-to-date, and it contrives to be popular without being trivial or banal. I imagine that a translation would find a ready market in this country, as it deserves.

E. A. LUNZER

Evaluation of Psychological Measures used in the Health Examination Survey of Children ages 6-11. (National Centre for Health Statistics, Series 2, Number 15). U.S. Department of Health, Education and Welfare, Washington, D.C., 1966, pp. 67. 45 cents.

CYCLE II of the U.S. Health Examination Survey is concerned with assessing growth and development in a representative sample of nearly 8,000 children from ages 6 to 11. In addition to physical, medical and social assessments, the Survey is applying four psychological measures: the Vocabulary and Block Design subtests of the Wechsler Intelligence Scale for Children; the Oral Reading and Arithmetic subtests of the Wide Range Achievement Test; the Draw-A-Man Test; and five cards from the Thematic Apperception Test. Testing was done in the period 1963-65. Prior to analysis of the data, this report was commissioned to make a critical evaluation of these psychological measures and to discuss the inferences on growth and development which could be made from them.

The result is a precise but comprehensive and factual summary of research (almost exclusively American) on these tests, with 154 references for WISC, 96 for Draw-A-Man and 100 for TAT, together with a review of the problems of selecting an appropriate achievement test such as WRAT. No data from the Survey itself are yet available.

As a reference text, providing for each test an up-to-date review of reliability and validity data, correlations with related measures, specific limitations, and problems of application and interpretation, the report is a remarkable bargain for 45 cents. Among selected topics discussed are: factors affecting WISC scores, comparison of WISC and S-B IQ's, cultural influences on drawings, and an objective scoring key for TAT. Though its special value for psychologists is for reference, the report also provides an insight into the problems of selecting appropriate tests for a large-scale survey and of processing and interpreting scores. The whole series of publications from the Health Examination Survey deserves much wider circulation.

JOHN NISBET

Clio Medica—Acta Academiae Internationalis Historiae Medicinae. Vol. 1, No. 1, November 1965. Pergamon Press, Oxford.

THIS is a brave venture on the part of Pergamon Press to strike a kind of classical note when the progress of medicine is geared to technology. In that sense medicine is looking forward, which is right and proper seeing the pace of progress is associated closely with other disciplines and social change. Nevertheless, to look back is a gesture of piety that the young might make, not only to catch a glimpse of the pioneers, but to trace the road along which medicine has advanced to our present-day advantage. Fortunately the editors have not devoted the first number to biographical sketches of the builders of medicine; they devote this number to relating past achievements to present work. For the psychiatrist, of particular interest is the first article on old and new views of the emotions and bodily change: Wright and Harvey versus Descartes, James and Cannon. Prof. Rather's analysis of this interesting line of progress is scholarly, showing how the deductive mind of the philosopher prepared the way for the modern debate on body-mind theory which rightly employs an inductive empirical procedure. Dr Theodorides throws light on a little-known work of Magendie, the master of Claude Bernard, which deals with the earliest searching for the cause of rabies.

Another contribution of interest is Dr Teich's exposure of the historical foundations of modern biochemistry which is concerned with the battle in physiology to rise above vitalistic explanations or rather retreats. This was an exciting struggle at the time and is stimulating reading. On this topic the names of Purkinje, Schwann and Liebig stand out. The last article takes us to the East, discussing the significance of salt amongst the Indians in their folklore and medicine. A treatise on ancient Indian embryology is brought to our notice from the Garbha Upanishad. In this article there are extracts from the Sanskrit text for those who have studied the origin of our language. For those who have not, their aesthetic sensitiveness will be attracted at least by the fine printing. This is a welcome addition to medical periodical literature. Clio, the Muse, is certainly not forgotten.

EMANUEL MILLER

Bases for Effective Reading. MILES A. TINKER. University of Minnesota Press, Minneapolis, 1965, pp. viii+322. \$7.50.

IN AN ATTEMPT to provide a complete discussion of the reading process, the author presents successive sections on such problems as the definition of reading; perception and comprehension; eye movements in reading; scientific typography; visual functions and illumination for reading; and the appraisal of reading proficiency.

There can be no doubt that this is an important book for people with a specialist interest in the study of reading from varying points of view. Educational psychologists, lecturers in education at all levels (secondary and junior, as well as infant), printers and publishers, will find this a valuable reference book. It will also be useful for students for higher degree courses in reading, and some of the chapters could be recommended for College of Education courses. The author's approach to the methods of teaching reading is eclectic, and his definitions of commonly used terms in reading are comprehensive but precise. In particular, a well-balanced view of the look-and-say versus phonics controversy is provided, and this problem is put in perspective through the author's consistent use of the development view of learning to read as his frame of reference.

However, the book is not uniformly successful. Its strengths lie naturally in those areas in which Dr. Tinker has concentrated his research over the past 30 years or more. On such questions, for example, as the relation between eye movements and reading proficiency, or the legibility of type, generally very thorough and critical analyses of research are provided, and the author gives confident answers to many practical problems. Other matters not so closely related to his special research interests, though less spontaneous, seem generally competent.

The chapter on typography for children's books appears to be disappointingly brief, but that reflects the state of our research on this problem. However, it is surprising to find no mention of Burt's work or the research of the M.R.C. Unit at Cambridge on legibility of print.

JOHN DOWNING

Normality and the Pathology of Childhood. Assessments of Development. ANNA FREUD. International University Press, Inc., New York, 1965. \$5.

MANY psychiatrists of note, and sociologists too, have attempted to define the criteria of normality with varying degrees of success. Psychoanalysis is so steeped in the phenomena which we term psychopathological that by that very token it has hitherto been unable, or perhaps reluctant, to define normality. If a complex theory of mental life derives from the data of disturbed behaviour, the resistances which tend to maintain pathological processes dog the footsteps of the student at every turn. In analytical procedures practitioners are perhaps prone to counter the objections of a patient when confronted by an interpretation with the term 'resistance'. This very attitude may well tend to the view that all statements of patients are derivatives of abnormal processes which the analysis is designed to overcome. On this basis every vicissitude of development is perilously near to abnormality. Man never *is*, but always *to be* blessed, in the very distant future. Normality is thereby postponed to the millenium. How welcome is it therefore to read the lucid exposition of Anna Freud searching for normality and claiming to have found it in the tangled mycelium of psychoanalytic thought and practice. By clarity of exposition Dr. Freud has followed in the founding father's footsteps, and has defined clearly what are the stages of development, giving as it were an ordered procession out of what might well have been a rabble of ideas painfully out of step.

The author's task is well planned on the lines of the tracing of development of children, using the classical foundation processes of Freudian mental dynamics. A key concept in Dr. Freud's exposition, and which is also a warning note, is that the line between health and illness is more difficult to draw in childhood than at later stages in human development. To her this is because the proportionate strengths of the Id and the Ego are in a state of constant flux, as are all other functions such as adaptation and defences, which also vary as between the beneficial and the harmful. These two words might be conveniently used operationally as normal and pathological. Freud's dictum that "where Id was there shall Ego be", in the process of development as during the analytic procedure, is tantamount to saying that functions as theoretically defined (and as used) arise from one another, their separating frontiers moving to and fro as in a battle line. The lines of development of the different functions continue in their growth at different rates, but our author does not clarify the difference in growth rates. It may be useful to revert to a physiological universe of discourse and speak of different growth gradients arising from genetic mechanisms of unfolding, which in the course of life experience, are encouraged or arrested by environmental influences, including, to be sure, the whole cultural life which envelops the child and its parents.

At this level the genetic endowments are wedded to the drives of which the Freudian Id is the primeval magma as it were. Freudian psychology, as Dr. Anna Freud so clearly demonstrates it, would be the gainer, one feels, if biological concepts were accepted rather than rejected. Indeed, one feels in this book that a convergence of hitherto divorced disciplines is taking place in the work. The author rightly places special stress on the importance of fact finding, but it is of great importance in any scientific discipline to realize the tendency of selectiveness when one has a theory to defend. Facts are focussed or dimmed by hunches and implicit hypotheses as well by the transference and counter-transference factor influencing the collecting of data by the dedicated research worker in any science. Dr. Freud is certainly not oblivious to this danger, for she stresses the recognition of the interlocking of internal and environmental forces which is axiomatic for all biological enquiries. This is increasingly so when we arrive at the study of the primates and man, where learning is paramount for adaptation and indeed for survival; is this not the meaning of Freud's classical dictum?

Furthermore, Dr. Freud insists that the observer must recognise the different ways in which children and parents estimate the dangerous, the desirable, and the reprehensible. And as the link of love is the essential bond between child and parent, fear of the loss of this security, through love, is the essential part of the primitive super-ego, which ought to be distinguished from its later structure in which the prevailing cultural ethics come to be built in. This, as the author implies even if she does not always make it clear, gives us the standard of normality which surely has strong cultural determinants.

There are matters of theory which are not always clear, and which if not clarified may well lead to wrong assessment of the theory itself, and of the therapeutic procedures which spring from them. For example, what is meant by the development of the Id? One has always supposed this to be the reservoir of unconscious impulses pressured by the vital forces which drive any organism. When it enters into the Ego through the discriminating perceptual apparatus it is now Ego, but fundamental Id stuff remains in constant supply. There is a continuing growth process, which is maturation plus learning through experience. Dr. Freud can be said in this book to lay the greatest stress upon development under a variety of influences, but we still do not quite know how to differentiate the maturation gradient from the interlocking gradient determined by the culture. This will always remain as the dilemma which most students find in the concept of normality, which has as its ingredients forces such as genetic endowment, determining the Id strength and the growth process *per se*, and the influence of a variety of cultural pressures. In this record the reader is confronted by a most significant concept of the author's theses, namely the normality of some aspects of regression. *Reculer pour mieux sauter* is a constant feature of mere living which at times necessitates falling back on old modes of action and gratification, as a means of replenishment and as a release, however temporary, from repressive forces which in family life and in the wider cultural situation are applied prematurely. The parent may have a quasi moral drive to hasten maturation before a child has itself reached the necessary stage for the acceptance of the maternal order, and stepping back may be a warning note to parents and a test of their solicitude. It is for this reason that the simultaneous observation of mother and child is necessary as it makes clear the vector of growth in the familiar

milieu. In such situations the mother may herself regress, but in a manner not as benign as the child's regression. In such a situation it is the mother who is the abnormal and maladapted.

Dr. Freud displays a most welcome awareness of the difficulties, indeed the dangers, of facile diagnosis and prognosis, springing in part from the possible misunderstanding of this problem of normal and abnormal regressive trends. She makes it quite clear that we dare not apply the methods of adult analysis to the child without accepting the child's psychological limits of expression. The child does not help by free association; nor does the use of play, phantasy games, and drawing, serve as valid substitutes or equivalents of adult analysis. Even symbolic interpretations are open to doubt, for the child's language is largely concrete, not yet subject to class naming, and therefore symbols too must be warily applied to child behaviour. It would be semantic heresy to do so on all occasions. Children are always acting out, and total permissiveness can provoke so much aggression that the relative strength of love and frustration cannot be easily assessed. Therefore diagnostic enthusiasm must be damped down. This is a timely warning to the therapeutic enthusiast; in the treatment session regressive behaviour which is condoned, because it discloses, may easily immobilize further treatment progress. The very fluidity of a child's mental structure and behaviour shows that the Unconscious and the Conscious are not so hermetically sealed off from one another as theory leads some to believe. In fact the frontier is rather in the nature of a semi-permeable membrane allowing at these early stages of development, for easier acting out, and for making easy that conversion of Id impulses into the stuff out of which adaptability is made.

This plasticity of the child is, as Dr. Freud states, of the very nature of its continuing development, which makes the assignation of diagnostic categories a difficult task. Indeed, to understand this development is to realise that at each stage the behaviour of the child has its adequacy in the attainment of which inner and outer forces conspire together. Where there are discrepancies due to regression and to lack of concordance as between mother and child, Dr. Freud suggests that variability occurs, but this is the source of character differences rather than of abnormality. This variability, springing so often from regressive trends, has an enriching effect upon the child. One might add in parenthesis that the regressive process occurs in the realms of aesthetic expression where so-called infantile imagery and phantasy may give a creative jolt to the artist's work, revitalized by contact again with the primary process. This looking backwards may also feed the scientific imagination both in the child's intellectual development and that of the adult.

This intensely compact work is not confined to the analysis of the theory of the child's mental development, as a quasi pendular movement, but contains much clinical material gleaned from the major problems of childhood, which are dealt with in a masterly fashion, not surprisingly in coming from a practitioner over a long period with great teaching experience. The handling of this widely selected clinical material is by no means didactic; rather it is tentative, and, for one so attached to a doctrine, very catholic and at times almost hesitant. This part of the book is very concentrated and is in itself a text book of clinical forms. Outstanding in this respect are the sections on delinquent behaviour and the diffused phenomena of early homosexual trends. These sections are likely to arouse keen clinical discussion and even dissent. But that is where the work is most stimulating, more so than the early portion of the book, which in itself reveals a real development in psycho-analytic flexibility.

It is for this reason that Dr. Freud's latest contribution to the dynamic study of the child mind is most welcome and essential reading for the established clinician and for all those in training.

E. MILLER

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NOTICE

The International Congress for Psychosomatic Medicine and Hypnosis, under the Patronage of the World Federation for Mental Health, will take place in Kyoto, Japan on the 12-14th July, 1967. Communications and requests for further particulars can be obtained from—The Department of Psychosomatic Medicine, Kyushu University School of Medicine, Fukuoka City, Japan.

The 1967 meetings of the American Psychopathological Association will be devoted to the topic of Social Psychiatry, and will be held February 17 and 18 at the Park Sheraton Hotel, New York City.

The programme is divided into four morning or afternoon sessions, each organized around a single topic: Etiology, Prevention and Treatment, Scientific Evidence, and Methodology of Evaluation. Papers will be presented by Alexander Leighton, John Clausen, Leo Srole, Ernest Gruenberg, H. Warren Dunham, Fritz Freyhan, and Paul Lemkau, among others. Papers are delivered by the participants in abbreviated form, with copies of the full papers available at the meetings. Presentations are followed by invited and floor discussions. Those interested in discussing invited papers should contact Dr. Joseph Zubin, 722 West 168th Street, New York, N.Y., 10032. For registration and other information, contact Dr. Fritz A. Freyhan, APPA Secretary, St. Vincent's Hospital, 153 W. 11th St., New York, N.Y. 10011.